GENERAL LIBRARY AUG 9 1920 UNIV. OF MICH.

THE BUILDER

A RECORD OF ARCHITECTURE & CONSTRUCTION

VOLUME CXIX. No. 4044. *Seventy-eighth Year.*

FRIDAY, AUGUST 6, 1920. REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

PRICE NINEPENCE. *By Post* 10*d.* *(This Week.)*

"I have seen several different forms of Mr. Boyle's 'Air-Pump' Ventilator in actual operation, and have much pleasure in testifying to their efficiency."—LORD KELVIN.

Boyle's

LATEST "PATENT **AIR-PUMP" VENTILATOR.**

Has DOUBLE the EXTRACTING POWER of Earlier Forms

Awarded the £50 Prize with Grand Diploma (only prize offered), at the International Ventilator Competition, London. Highest Award, International Ventilator Competition, Paris, Two Gold Medals.

"Mr. Boyle's complete success in securing the required continuous upward impulse is testified to by high authorities."—GOVERNMENT REPORT (Blue Book).

ROBERT BOYLE & SON,

Ventilating Engineers,

64, HOLBORN VIADUCT, LONDON.

"Messrs. Robert Boyle and Son, as the founders of the profession of Ventilation Engineering, have raised the subject to the dignity of a science."—REPORT ON THE VENTILATION OF THE LONDON CUSTOM HOUSE.

HOBBS, HART, & CO.'S

SAFES
SAFES
SAFES
SAFES
SAFES
SAFES

ARE THE BEST.

76, CHEAPSIDE, E.C.2.

PARTITION SLABS

See page xx.

WOOD CARVING

ARCHITECTURAL

POWIS & GRAHAM, 29 Liverpool Rd. London, N. Phone: NORTH 2929.

MODELS

From Plans, Photographs, or Actual Buildings.

L. H. PARTRIDGE. 4 & 5 Mason's Avenue, LONDON, E.C.2.

HYDRAULIC LIFTS. NO FIRE RISKS.

LONDON HYDRAULIC POWER CO.

HATFIELD STREET, S.E.1. HOP. 4540.

THE LIFT & HOIST Co.

Sole Makers of "Premier" Rolling Shutters.

108-114, Prince Street, DEPTFORD, S.E.

WAYGOOD-OTIS LIFTS

Offices:—54-5, Fetter-lane, E.C.4 (T.N.: Holborn 2001, T.A.: "Waygood, Fleet, London"); 62-3, Lionel-street, Birmingham (T.N.: Cen. 40 Birmingham, T.A.: "Waygood, Birmingham"). Works: Falmouth-road, London, S.E.1.

ELECTRIC LIFTS

Smith, Major, & Stevens, Ltd. LONDON & NORTHAMPTON.

(Late Archibald Smith & Stevens).

LIFTS REVOLVING SHUTTERS COLLAPSIBLE GATES.

DENNISON, KETT & CO., LTD.

Tel.: Bank 8356. 11, QUEEN VICTORIA ST., E.C.

THE

EXPRESS LIFT CO., LD.

GREYCOAT STREET WORKS, WESTMINSTER, S.W.1

ALL TYPES.

'Phone: Victoria 6115 (3 lines).

Specify

'CROID'

THE STRONGEST GLUE KNOWN

IMPROVED LIQUID GLUES Co., Ltd.

(Contractors to H.M. Government)

8, Bushell Street, London, E.1.

Also Glasgow.

EWART'S WATER HEATERS

FOR

HOUSING SCHEMES.

BATH AND SINK SUPPLY £8 10 0.

SEND FOR LIST with full particulars and present prices.

EWART & SON, Ltd., 346-350 EUSTON RD., N.W.1

TITAN LIFTS.

THE TITAN LIFT CO., Ltd.,

20, HIGH HOLBORN, W.C. Telephone—4687 HOLBORN.

HEATING

ROSSER & RUSSELL, Ltd.

(MAYFAIR 5210)

37 DUKE STREET, OXFORD STREET, LONDON, W.1

MODELS OF WORKS BUILDINGS ESTATES, etc.

Executed by JOHN B. THORP,

98, Gray's Inn Road (next to Holborn Hall),

Phone Holborn, 1011 LONDON, W.C. 1

SIMPLEX LEAD GLAZING

FOR ROOFS, SKYLIGHTS & HORTICULTURAL WORK.

No Zinc, Iron or Putty Used

No Special Contract Required.

GROVER & Co., Ltd.

BRITANNIA ENGINEERING WORKS, CARPENTERS ROAD, STRATFORD, E15

MIXERS

For CONCRETE or TAR MACADAM

Mechanical Sand Dryers

Tar-Spraying Machines

THOMAS COLEMAN & SONS, LTD., ALFRETON ROAD, DERBY.

Analysis of Advertisements.

Artificial Stone—
Brookes, Ltd.
Concrete Units Co.
Patent Impervious Stone Co

Asbestos Tiles & Sheets—
Bell's United Asbestos Co.
British Everite & Asbestilite Works, Ltd.
British Fibrocement Works.
British Roofing Co., Ltd.
British Uralite Co. (1908) Ltd.
Machin & Kingsley, Ltd
Martinet Slate & Sheet Co., Ltd
Turner Bros. Asbestos Co., Ltd

Asphalte—
Bradshaw's Asphalte Co. Ltd
Engert & Rolfe Ltd
Faldo's
Hobman, A. C. W. & Co. Ltd.
Limmer & Trinidad Lake Co.
Ragusa Asphalte Co. Ltd.
Val de Travers Asphalte Co.

Bells, &c.—
Carr, Chas. Ltd.
Gillett & Johnston

Bitumen Sheeting—
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
McNeill, F. & Co. Ltd.
Vulcanite Ltd.
Wailes Dove Bitumastic, Ltd

Blind Cords—
Anchor Brand.
Woods Sons & Co.

Blinds (Window, &c.)—
Bryden, John, & Sons
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Meighan, James & Son
Williams G. A. & Son

Boilers—
Danks, H. & T. (Netherton).
Hartley & Sugden, Ltd.
Jenkins, Robert, & Co., Ltd.
Kinnell Chas. P. & Co. Ltd.

Bricks—
Builders' Material Association
Burley, C. Ltd.
Dennis, Henry
Lawford & Sons, Ltd.
Leeds Fireclay Co. Ltd.
Ravenhead Pipe & Brick Co. Ltd
Rufford & Co.
Smeed, Dean & Co. Ltd.
Ward, R. G. & Co.
Young & Son

Bronze & Iron Founders—
Martyn, H. H. & Co., Ltd.

Builders' Ironmongery—
Kenrick, Archibald & Sons, Ltd
Nicholls & Clarke
O'Brien, Thomas & Co.
Young & Marten, Ltd

Building Contractors—
Chessums, Ltd.
Higgs & Hill, Ltd.
Jones, Walter & Sons
Patman & Fotheringham, Ltd.
Somerville, D. G. & Co. Ltd.
Williams, Howell J., Ltd.

Cartage Contractors—
Bissell, J. A.
Earley
Wiggins, G.

Castings—
Bayliss, Jones & Bayliss, Ltd.
Haywards, Ltd.
Macfarlane, W. & Co.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Cement, Lime, Plaster—
Builders' Material Association
Burley, C. Ltd
Cement Marketing Co.
Kaye & Co. Ltd.
Lawford & Sons, Ltd
Oxford Portland Cement Co.
Smeed, Dean & Co. Ltd.
Young & Son

Cement Waterproofing—
Ironite Co., Ltd.
Pudlo
Pruflt

Clocks (Church & Tower)—
Gillett & Johnston

Chimney Shafts—
Chimneys Limited.
Danks, H. & T. (Netherton) Ltd
Furse, W. J.

Chimney Cowls, &c.—
Ewart & Son, Ltd.
Farmiloe, George & Sons, Ltd
Nicholls & Clarke, Ltd.
Young & Marten Ltd

Concrete Houses—
Concrete Units Co.
Roberts, A., Co., Ltd.

Concrete Machinery—
Australia Pat. Concrete Block
Chalmers-Edina Co.
Ingersoll-Rand Co.
Martin-Harvey Co
Millars' Timber & Trading Co.
Stothert & Pitt
Whitaker, R. G., Ltd.
Winget, Limited

Coatostone—
Coatostone Decoration Co

Concrete Piling—
Simplex Concrete Piles, Ltd.
Somerville, D. G. & Co Ltd.

Concrete Specialities—
British Construction Co.
Building Products, Ltd.
Concrete Blocks, Ltd.
Concrete Units Co.

Concrete (Reinforced)—
British Reinforced Concrete
Concrete Units Co.
Expanded Metal Co., Ltd.
Holst & Co.
Johnson's Reinforced Concrete
Jones, Walter & Sons
Lind, Peter & Co.
Patent Impervious Stone Co.
Self-Sentering Ex. Metal
Somerville, D. G. & Co., Ltd.
Stewart, J. & W.
Trussed Concrete Steel Co., Ltd
Walker-Westen Co., Ltd.

Contractors' Plant—
Boyer, Henry
Builders' Material Association
Lewis & Lewis Ltd
Palmer's Travelling Cradle
Parker, F. & Co.
Stephen & Carter Ltd

Damp Proof Courses—
Briggs, W., & Sons Ltd.
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
Hobman, A. C. W. & Co. Ltd.
Ironite Co. Ltd. (The)
Kerner-Greenwood & Co. (Pudlo)
McNeill F. & Co Ltd
Permanite, Ltd.
Ragusa Aspnalte Co. Ltd.
Rowse & Co.
Vulcanite Ltd

Decorators' Dust Sheets—
Moore, W & Co.

Demolition—
Boyer, Henry
Cowell, A. E. & Co.
Greenham, Henry J.

Doors (Iron, Steel, &c.)—
Dennison, Kett, & Co. Ltd
Gibson, Arthur L.
Haywards, Ltd.
Hobbs, Hart, & Co. Ltd.
Lift and Hoist Co.

Door Hangers & Rollers—
Bousfield's Ironworks.
Nicholls & Clarke, Ltd.
O'Brien, Thomas, & Co.
Parker, Winder & Achurch
Young & Marten Ltd

Door Springs and Hinges—
Nicholls & Clarke, Ltd.
Young & Marten Ltd

Drawing Instruments—
Baker C.
Clarkson's.

Electric Lamps—
Mazda. Osram.

Electric Lighting & Fittings
General Electric Co., Ltd.
Harrison & Co.
Malcolm & Allan, Ltd.
Mather & Platt, Ltd
Sims & Sims
Tilley Bros.
Tredegars Ltd

Engines, Mortar Mills—
Lewis & Lewis, Ltd.

Facias, &c.—
Francis, S. W & Co. Ltd.
Haskins, S., & Bros., Ltd.

Felt—
Anderson, D. & Son, Ltd.
Engert & Rolfe, Ltd.
Gibson, Arthur L.
McNeill F. & Co. Ltd.

Fencing (Wood, &c.)—
Ford, H. J.
Rowland Bros.

Fibre for Mixing—
Woods. Sons and Co

Fire Escapes, Staircases—
Clark, Hunt, & Co. Ltd.
Davis, H. & C. & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co

Fireproof Flooring, &c.—
Bell's United Asbestos Co.
British Reinforced Concrete
Dawnay, A. D. & Sons, Ltd.
Expanded Metal Co. Ltd.
Haywards, Ltd.
Ironite Co. Ltd.
King, J. A. & Co
Kleine Pat. Flooring Co, Ltd.
Stewart Fireproof Floor Co.
Somerville D. G. & Co. Ltd.
Thermos Flooring Co. Ltd

Flint Paper—
Oakey, J. & Sons, Ltd.

Folding Partitions—
Educational Supply Assoc., Ltd.
Lift and Hoist Co.
Thornborough & Co. Ltd.

Garden Hose—
Wilcox, W. H. & Co. Ltd.
Woods, Sons & Co.

Gates (Collapsible)—
Bostwick Gate Co., Ltd.
Dennison, Kett, & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co
Thornborough & Co. Ltd.

Gates, Railings (Iron), &c.—
Bayliss, Jones & Bayliss, Ltd.
Haywards, Ltd.
Nicholls & Clarke Ltd.
Young & Marten, Ltd.

Glue (Liquid)—
Oroid
Gluton, Ltd.
Lactocol
Pactol

Glass (Plate & Window)—
British Luxfer Prism Synd.
Clark J. & Son. Ltd.
Farmiloe, George & Sons. Ltd.
Haywards, Ltd.
King, J. A. & Co
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke,
Pilkington Bros., Ltd.
Young & Marten, Ltd.

Glass Paper—
Oakey J. & Sons. Ltd.

Glass (Stained, Painted)—
British Luxfer Synd., Ltd.
Clark, J. & Son
Farmiloe, George & Sons, Ltd.
Gibbs, W., & Sons, Ltd.
Haywards, Ltd.
King, J. A. & Co.
Martyn, H. H. & Co., Ltd.
Nicholls & Clarke
Young & Marten Ltd.

Glazing—
Braby, F. & Co. Ltd.
British Luxfer Synd., Ltd.
Farmiloe, George & Sons, Ltd.
Freeman s
Grover & Co. Ltd.
Haywards, Ltd.
Hellliwell & Co. Ltd.
King, J. A. & Co.
"Metacon" Patent Glazing.
Nicholls & Clarke, Ltd.
Partridge, T. & Co.
Young & Marten Ltd

Gutter Brackets—
Parker Winder & Achurch

Heating and Lighting
Akers & Co, Geo. A.
Central London Electrical
Clark, Hunt, & Co., Ltd.
Ewart & Son, Ltd.
Hartley & Sugden Ltd.
Haywards, Ltd.
Kinnell Chas. P. & Co., Ltd.
Martin, W. C. & Co.
Messenger & Co.
Murray, S. D. & Co., Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd.
Rosser & Russell Ltd.
Walker, H. & Son, Ltd.
Young & Marten Ltd

Hot Water Supply—
Clark, Hunt & Co. Ltd.
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Fildes, Thos.
Jenkins, Robert & Co. Ltd.
Keith, James, & Blackman
Mills, Engths & Co., Ltd.
Murray, S. D. & Co., Ltd.
Potterton, Thos.
Rosser & Russell, Ltd.
Walker, H. & Son, Ltd.

Hydraulic Power—
London Hydraulic Power Co.

Insurance—
Cornhill Insce. Co., Ltd.
London and Lancashire Fire.
Timber Trades Mutual Accident

Ironite—
Ironite Co. Ltd.

"Jacks"—
Herbert Morris, Ltd.

Joinery, Mouldings, &c.—
Aston Grant & Co., Ltd.
Austins (East Ham & Ilford).
Cabinet Co. (S. L.), Ltd.
Central Aircraft Co.
Falcon Works, Ltd.
Foulds, Arthur, Ltd.
Gluton Ltd.
Gosport Aircraft & Eng. Co.
Heal & Son
Holt, J. & Son.
Jennings, C. & Co
Martyn, H. H. & Co., Ltd.
Middlesex Joinery Works Ltd.
Morley, E. & Sons
Newman, John, Ltd.
Ogilvie & Co.
Orfeur C. E. Ltd.
Peacock, Chas. & Co.
Roach, H.
Slade, Geo. & Co., Ltd.
Thornborough & Co. Ltd.
Tucker, W. Duncan, & Sons
Wallis, John & Co.
West Heath Joinery Works.
West London Timber & Moulding Co. Ltd.
Ziman, H.

Jointless Flooring—
Bell's United Asbestos Co.
Brentford Construction Co.,
British Bolomeut Co. Ltd
Durato
Ebner, J. F.
King, J. A. & Co.
Thermos Flooring Co. Ltd.
Wilfley Co. Ltd.

Ladders—
Acme Patent Ladder Co.
Cayless Brothers (Batterseas).
Drew, Clark & Co.
Lawford & Sons, Ltd.
Parker & Co
Smith Bros.
Stephens & Carter
Stephens & Stephens
Trollope & Colls, Ltd.

Laundry Appliances—
Bradford, T. & Co. Ltd

Lead, Oil, Colours, Size, &c
Builders' Material Association
Farmiloe, G. & Sons, Ltd.
Farmiloe, T. & W., Ltd.
Girdler, J. & Co.
Nicholls & Clarke
Young & Marten, Ltd.

Letters, &c.—
Francis S. W. & Co Ltd.

Lifts, Hoists, Cranes, &c.—
A. & A. Electrical Co. Ltd.
Bryden John, & Sons
Dennison, Kett & Co., Ltd
Express Lift Co., Ltd.
Haskins, S. & Bros. Ltd.
Hoisting Appliance Co.
Lewis & Lewis, Ltd.
Lift and Hoist Co.
Smith, Major & Steven, Ltd.
Steven, A. & P.
Titan Lift Co. Ltd.
Vaughan Crane Co., Ltd.
Waygood-Otis Ltd.

Lightning Conductors—
Aldington, G.
Furse W. J

Locks, Latches, &c.
Hobbs, Hart & Co. Ltd
Nicholls & Clarke, Ltd
Young & Marten Ltd.

Machinery—
Johnson, C. H. & Sons, Ltd.

Marble—
Kelly & Co
Moore, M. & R.
Walker, Chas. & Co.

Metal Casements—
British Luxfer Syndicate, Ltd.
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Nicholls & Clarke Ltd.
Young & Marten, Ltd.

Metal Work—
Marshall, R. E. & C., Ltd.
Shrivell, Wm., Ltd.
Tilley Bros.
Thornborough & Co., Ltd.

Model Makers—
Partridge, I. H.
Thorp, J. B.

Mosaic Work—
Brookes, Ltd.
Ebner, J. F.
Maw & Co. Ltd.
Moore, M. & R.

Motor Vehicles, Transport.
Commercial Cars Ltd.
London & Midland Motors, Ld
Mons Engineering Co.
Paine & Patterson.

Paints, Stains, Varnish—
Berger, Lewis, & Sons, Ltd.
British Emaillite Co.
Builders' Material Association
Carson, W. & Sons
Clark, Robt. Ingham & Co. Ld
Cuirass Products, Ltd.
Dixon's White, Ltd.
Farmiloe, George & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Gay R. & Co., Ltd
Gelatinous White Co.
Nicholls & Clarke, Ltd.
Pinchin, Johnson & Co., Ltd.
Prices' Company, Ltd.
Rose, Sir A. W. & Co., Ltd.
Silicate Paint Co.
Stephens, H. C.
Torbay & Dart Paint Co. Ltd.
Young & Marten Ltd.

Parquet Flooring—
Damman & Co.
Ebner, J. F.
Mainzer's "Arraber" Co.
Turpin's

Partitions, Slabs, &c.—
British Uralite Co. (1908)
Builders' Material Association
Clinker and Breeze Concrete Slab Mfg. Co.
Concrete Blocks, Ltd.
Concrete Units Co.
Educational Supply Co. Ltd.
Expanded Metal Co. Ltd.
Jones, Fredk. & Co. Ltd.
King, J. A. & Co.
Lawford & Sons, Ltd.
Muribloc (Partition Slabs), Ltd.
Thames Mills (Calne).
Wright, J. & Co.

Pavement, &c., Lights—
British Luxfer Prism Synd.,
Haywards, Ltd.
King, J. A. & Co

Picture Cords—
Anchor Brand
Woods, Sons & Co

Pipe Yarns—
Woods, Sons & Co.

Plaster Work—
Battiscombe & Harris Ltd.

Pumps, Pumping Engines
Barclay, James
Braby, F. & Co. Ltd
Drake & Gorham, Ltd
Phœnix Engineering Co Ltd.
Pulsometer Engineering Co.
Willcox W. H. & Co Ltd.

Rawiplugs—
Rawiplug Co.

Rooflights—
Braby, F. & Co. Ltd.
British Luxfer Prism Synd.

Roofing Compounds—
Baxendale & Co., Ltd., "Texa."
Callender Geo. M. & Co., Ltd.
Cuirass Products
"Faretex."
Triton (Liverpool), Ltd

Roofing (Felt)—
British Roofing Co. Ltd.
Cuirass Products, Ltd.
McNeill, F. & Co. Ltd.
Vulcanite Ltd.

Roofings (various brands
"Ailizator" (British Roofing Co. Ltd.)
"Challenge" (Briggs & Sons)
"Lion" (F. McNeill & Co.)
National Roofing, Ltd.
"Rok" (D. Anderson & Son, Ltd
"Ruberoid" (Ruberoid Co. Ltd)
"Vulcanite" (Vulcanite Ltd).

Roofs (Zinc and Copper)—
Braby, F. & Co. Ltd.
Ewart & Son, Ltd.

Ropes (Fall and Scaffold)—
Brown, J. H. & Co.
Bullivant & Co., Ltd.
Woods, Sons & Co.

Safes—
Hobbs, Hart, & Co. Ltd.
Tann, John, Ltd.

Sand, Gravel, &c.
Boyer Henry
Concrete Units Co.
Hunt (Hoddesdon) Ltd.
Lawford & Sons, Ltd.
Mitcham Sand & Gravel Co.
Pottern (Gravel Pits) Ltd.

Sanitary Appliances and Ware—
Andrew & Nanson
Builders' Material Association
Burn Bros.
Doulton & Co. Ltd.
Emanuel, A. & Sons, Ltd.
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Leeds Fireclay Co. Ltd.
Macfarlane, W. & Co.
Nicholls & Clarke
Rufford & Co.
Sessions & Sons, Ltd.
Thames Bank Iron Co, Ltd.
Young & Marten Ltd

Sash Lines, Cords, &c.—
Anchor Brand
Woods, Sons & Co.

Scaffolding—
Humphries Patent Bracket
Lawford & Sons, Ltd
Palmer's Travelling Cradle
Parker, F. & Co.
Patent Rapid Scaffold Tie Co.
Spencer's Travelling Scaffold.
Stephens & Carter
Tubular Scaffolding Co.

Scrap Metals—
Buyers of Scrap Metals Ltd.

Settings for Boilers, &c.
Aldington, G.
Danks, H. & T. (Netherton) Ltd.

Sculptors—
Martyn, H. H. & Co. Ltd.
Powis & Graham

Sewage Purification—
Tuke & Bell Ltd.

Shop Fronts (Metal & Wood)
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros. Ltd.

Shutters—
Dennison, Kett, & Co.
Francis, S. W. & Co. Ltd.
Gibson, Arthur L.
Haskins, S. & Bros. Ltd.
Lift & Hoist Co.
Thornborough & Co. Ltd.

Silicate Cotton—
Jones, Fredk. & Co. Ltd.
McNeill F. & Co. Ltd.

Sind Wool—
Jones, Fredk. & Co. Ltd.
McNeill F. & Co. Ltd.

Slates—
Builders' Material Association
Hobson, W. D.
Lamb, W. T. & Sons
Lawford & Sons, Ltd.
Sessions & Sons Ltd.

Slating Contractors—
Elridge, J. J. Junr., Ltd.
Macquire, John

Sprinklers (Automatic)—
Mather & Platt Ltd.

Stable, &c., Fittings—
Bayliss, Jones & Bayliss, Ltd.
Haywards, Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.

Stair Treads—
Safety Tread Syndicate, Ltd.

Staircases, Verandahs, &c.
Art Metal Construction, Ltd.
Carron Company
Davis, H. & C. & Co.
Haywards Ltd

Steam Cleaning—
Steam Cleaning Corporation

Steel Fittings—
Art Metal Construction Co.
Critiall Mfg. Co., Ltd.
Grovesend Steel Ceiling Co.

Stone Restoration—
The Stone Preservation Co., Ld

Stone—
Bath & Portland Stone, Ltd.

Stoves, Ranges, Mantels—
Carron Company
Clark, Hunt & Co., Ltd.
Interoven Stove Co. Ltd.
Nicholls & Clarke, Ltd.
Musgrave & Co. Ltd.
Potterton, Thos
Richmond Gas Stove Co. Ltd.
Sessions, J. & Sons
Stimex Gas Stove Co.
Wright, Geo. Ltd
Young & Marten Ltd.

Strong Rooms—
Hobbs, Hart, & Co Ltd
Tann John Ltd

Structural Iron and Steel
Braby, F. & Co. Ltd.
Braithwaite & Co.
Clark, Hunt & Co. Ltd.
Davis, H. & C. & Co
Dawnay A. D. & Sons, Ltd.
Fleming, P. & R. & Co.
Freeman's
Haywards, Ltd.
Henderson & Glass
Measures Bros. (1911), Ltd.
Partridge, T. & Co.
Power & Deane, Ransome's Ld
Shaw M. T. & Co.
Wild, James & Co.

Suction Cleaning—
Sturtevant Engineering Co. Ld.

Surveying Instruments—
C. Baker
Clarkson's

Tanks, Cisterns &c.
Braby, F. & Co.
Builders' Material Association
Farmiloe, George & Sons, Ltd.
London Galvanised Iron Co.
Mather & Platt, Ltd.
National Galvanisers Ltd.
Nicholls & Clarke, Ltd.
Shaw, M. T. & Co.
Young & Marten Ltd.

Tar (all kinds)—
Woods, Sons & Co.

Tar Boilers—
Phœnix Engineering Co. Ltd.

Terra Cotta—
Dennis, Henry
Hathern Station Brick Co., Ld.
Leeds Fireclay Co. Ltd.

Tiles—
Cope & Co
Dennis, Henry
Hodge, F., Ltd.,
Leeds Fireclay Co. Ltd.
Maw & Co., Ltd.
Minton Hollins & Co. Ltd.
Porcelain Tile & Mantel Co., Ld
White, Child & Baney, Ltd.
Wire, A. D. Ltd.

Timber—
Asson Grant & Co., Ltd.
Calder & McDougall. Ltd.
Ford, H. J.
Gilkaten & Son, Ltd.
Hall, L.
Jennings, C. & Co.
Leary, C. & Co.
Longbetham, J. & Co.
Longhurst, E. & Sons
Millar's Timber & Trading Co.
Priday, S.
Venesta, Ltd.

Tyres—
Dunlop Rubber Co. Ltd.
North British Rubber Co.
Palatine

Underlining, &c.—
Engert & Rolfe Ltd.
McNeill, F. & Co. Ltd
Vulcanite, Ltd.
Willesden Paper & Canvas Wks.

Ventilating—
Boyle, R. & Son
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Haywards, Ltd.
Keith & Blackman Co.
Kinnell, Chas P. & Co., Ltd.
Murray, S. D. & Co., Ltd.
Rosser & Russell, Ltd.
Sturtevant Engineering Co. Ld

Wall & Ceiling Covering—
Beaver Board Co., Ltd
Fiberlic
Machin & Kingsley, Ltd.
Mainzer's "Arraber" Co.
Thames Mills (Calne)
Venesta, Ltd.
Young & Marten Ltd

Waterproofing—
Adamite & Co., Ltd.
Callender, G. M. & Co.
Ebner, J. F.
Kerner-Greenwood & Co. (Pudlo)
Torbay & Dart Paint Co.

Wine Bins (Iron)—
Bayliss, Jones & Bayliss, Ltd.
Farrow & Jackson

Wire Screens—
Parker, Winder & Achurch

Window Frames & Sashes
Braby, F. & Co Ltd.
Carron Company
Clark, Hunt, & Co. Ltd.
Crittall Mfg. Co., Ltd.
Haywards, Ltd
Williams & Williams, Ltd.

Wood Flooring—
Acme Flooring and Paving Co.
Improved Wood Pavement Co.
Turpin's
Zeta Wood Flooring Co.

Wood Preservative—
Fuller, John H. & Co. Ltd.
Maclean Wm. Sons, & Co.
Major & Co., Ltd.

'PHONE N. 199

GEO. SLADE & COMPY., LTD.
BARNSBURY PARK, LONDON, N.1

WORKERS IN WOOD
OAK PANELLING £1,000 PER MILE
ENQUIRIES SOLICITED FOR HARD AND SOFT WOOD
JOINERY

THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXIX.—No. 4044. AUGUST 6, 1920

ADVERTISEMENT AND WAR MEMORIALS.

IN considering the subject of war memorials—memorials to the dead—we are in need of remembering that they are also memorials of the living. The architect and craftsman, if they are enshrining the history of others, are also recording their own, in the witness which is offered by their work of their own aims and practice, which should be above suspicion. At the present time, both the Press and the public express themselves with less than the usual restraint. There is a cloud over the arts and a failure in that prestige which maintains respect for them. This, at a time when there are so many societies devoted to the upholding of a high standard in art, and of advising the public, is a significant omen.

New values are being created which tend to dispute ideals not formed out of practice. It is seen that excellence is not an accident in any art, but that it grows out of sound principles of craftsmanship faithfully maintained, and the public do not feel quite sure that those who would advise are careful to maintain them. If we point to instances in which this disparity between teaching and practice appears, it is only to repeat what is being very generally asserted. The public no longer take the reformer at his own valuation, nor is reputation quite as sacred to us as formerly; town councils and other bodies contemplating war memorials should take notice of this change and not depend too much on popular reputation and the amount of money they can command. The gifts of God are not to be bought. If public bodies contemplating war memorials could see a list of the amount of work entrusted to a select few who divide so much of the work between them, they would be not a little startled. If the number of commissions were set against the amount of work possible to be undertaken by any single individual—if the claims of honest craftsmanship are to be at all regarded—they would see the matter with new eyes, realising that, except as employers applying a factory system to art, the thing is impossible. It cannot be done that way. Public bodies have only one security, and that is to know enough of the nature of art to seek it where it may be found—and it is this security which they have neglected. But, it may be said, "are there not societies such as the Royal Academy and many others of more recent creation, ready to advise, in their desire to maintain a high standard, and to instruct an ill-informed public." Only lately, we read in the advertisement pages of a daily newspaper an announcement from the Royal Society of British Sculptors, the latest adherents to this post-war altruism, expressing their desire "to maintain a high standard" by advising the public *gratis* and free of charge in the matter of war memorials. This is clearly quite disinterested, and we should not dream of suggesting that the Royal Society of British Sculptors, in wishing to advise *gratis*, in this way, was actuated by anything but zeal for the public service. It is the more unfortunate that a thankless public does not show the whole-hearted gratitude which such philanthropy deserves. It is to be hoped that a wrong impression will not be created—because, like Cæsar's wife, the arts should be above suspicion—and if they regarded such advisers as merely aiming at their own advantage, using advertisement covertly and without the candour of the honest tradesman, it would have a very bad effect indeed. We suggest nothing of the kind but, in any case, is the public secured in such a way? Can it thus safely entrust its ignorance to such advisers, delegating its own responsibility? Democracy is, no doubt, very much on its trial, and its fitness for citizenship is not strengthened by such a view. Some may be inclined to inquire whether the public have ever asked for such help, and may think that those who thus offer it so freely are themselves in need of the physician and of setting their own house in order—that the adviser needs advising, that it is the physician who is sick!

The Council of the Royal Society of British Sculptors, which is prepared to advise on war memorials, will appreciate the difficulty in which the public are placed. Their advertisement comes perilously soon after the issue of the *Times* which contained a review of British sculpture at the Royal Academy by its art critic, who speaks of "a mass of exhausted convention, or lack of all convention," . . . "our sculptors seem to have nothing to say which has not been said a thousand times before," . . . "we shall have no real sculpture until it is again a natural means of adorning buildings, until it is part of the craft of stonemasons and not merely a modelling of effigies, executed afterwards by an underling"—and, shall we add, that there is the Nurse Cavell Memorial to adorn the tale! What, then, is a bewildered public to do, thus crushed between the upper and nether millstones of these advertisements and of articles devoted to art criticism? Shall we rely on the advertisements of the Royal Society of British Sculptors, or on their work? Some discussion has recently taken place as to whether architects should advertise, it not being regarded as etiquette for artists to do so. Of course, no such idea entered into the minds of the Royal Society of British Sculptors in issuing their advertisement; but if it creates a bad impression, and becomes regarded as advertisement disguised as philanthropy and zeal for the public service, it can do nothing but harm to the cause it is supposed to serve.

It is time that we saw things as they are. We owe it to the dignity of art to do so. It is unfortunate that so few artists believe enough in art to see that there is only one way to maintain its high standards, which is to practise them oneself. What we desire is that the artist should see himself as others see him, for the security for art rests on him, and it is no use to talk of maintaining high standards or to blame the public, so long as his own practice leaves much to be desired. Moreover, stale Victorian altruisms and the misbegotten philanthropies of the "eighties" can no longer disguise the truth from us. Art deeply needs the practice of sounder principles, of an enhanced appreciation of the responsibilities of citizenship. This is the only security now for the place of art in life, and of the incalculable benefits which it is able to bestow.

NOTES.

The Lincoln Statue.

MR. CASS GILBERT, our distinguished visitor, recalls interesting reminiscences of St. Gaudens, the sculptor, in the *Times* last week. In 1883, Stanford White, Cass Gilbert and Augustine St. Gaudens met at St. Helena, Montana, when St. Gaudens was on his way to Chicago "to close a contract for a statue of Lincoln which he hoped would prove the greatest work which had yet come to him, and this work left him poorer in purse than when he undertook it,"—so that the world should be largely in his debt.

Belgian Contractors' Appreciation

THE Federation of Building and Public Works Contractors of Belgium has forwarded to the National Federation of Building Trades' Employers of Great Britain and Ireland a piece of sculptured bronze in recognition of the services which the National Federation rendered the Belgian contractors in this country during the war period. In a letter to the National Federation, the Belgian Federation has stated that it was thought that the Belgian Government should be associated with the testimony, and that this could not be done better than by according the General Secretary of the National Federation (Mr. A. G. White) the medal of King Albert in gold. The request met with the most favourable reception by the King of the Belgians, and the medal of the order has been forwarded to Mr. White, whose many friends will congratulate him and the Federation on a well-deserved honour.

Westminster Abbey.

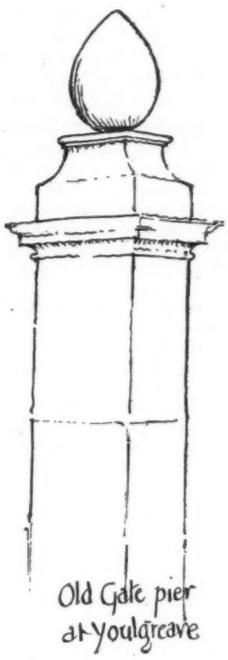
EVERYONE will be glad to know that by the timely gift of ten thousand pounds from the Anglo-American Oil Co., the first one hundred thousand pounds has been collected for the preservation of Westminster Abbey. We are all naturally anxious that the veritable old building shall be preserved to us in its time-honoured appearance for as long as practicable, and some go so far as to desire the replacement in facsimile of the old work as it reaches the stage of actual dissolution. We are now looking on much which had no actual existence in the days of our forefathers, but which still preserves to us in the main the ancient form. The temper of the public is such at present that no innovation of purely modern design would be tolerated, and it is desired apparently that the historic continuity shall not cease. But this does not mean that an architect's services are not needed or that nothing further than craftsmanship is called for. For the present at least we may feel satisfied that the Abbey is in good hands.

Windows by Mr. Henry Holiday.

THE three windows which Mr. Holiday has been showing at his studio are interesting examples of the work of a veteran artist. Mr. Holiday has a long and honourable record of achievement both in painting and applied art. To have worked so long and with such consistency of aim and to be still producing with unimpaired vigour at 81 years of age is no small evidence of character. Of the windows shown, two are for the east end of Calvary Church, Summit, New York, the colour of which is pleasant and the glass not overpainted. If we must except the heads and hands of the figures as not quite preserving this quality of translucency, it is not to criticise what is often a source of stumbling; but the over-matting of the flesh tends to detach these parts of the window from the rest, and is a loss to the unity of treatment in the whole. As a result of Mr. Holiday's own experiments in glass he has succeeded in obtaining a fine broken ultramarine blue, of which he makes effective use, and his glass has the interest and value of a technical thoroughness growing out of his own outlook, and of the end he has set himself. At the present time we attach more importance to the design of the leading as an essential beauty of the window, and find an added beauty in the contrast of passages of white mingling with and giving accent to the colour. There is more, too, of the glass quality preserved by the use of stipple in painting than formerly. But Mr. Holiday has his own approach, and as such it merits all the respect which is owing to an artist who over a long period of time has consistently maintained a high standard with singleness of aim. It is a question whether the wholly coloured glass window without the relief of passages of white which adds so much to its brilliance and limpid quality, and preserves its use as light giving, will ever be quite satisfactory; and we are compelled to add that stained glass wholly executed by assistants, however much trained in the artist's manner, can never sustain the quality imparted by the artist himself.

Shenley War Memorial.

[This memorial was unveiled on the 14th ult. by the Solicitor-General, Sir Ernest M. Pollock, and dedicated by the Right Rev. Bishop Taylor Smith, Chaplain-General to the Forces. The material is Stancliffe stone, on a grey granite step, and the total height is 17 ft. 6 in. The design is by Mr. Thos. J. Clapperton, R.B.S., and the work was erected by Messrs. Wm. Kirkpatrick, Ltd., Manchester.]



A bit of characteristic old stonework at Youlgreave, Derbyshire.

Windows for St. Mary's Church, Wimbledon.

A THREE LIGHT window for St. Mary's Church, Wimbledon, is also shown, which has for its subject "Faith, Hope and Charity." They are figures typical of the artist's manner, and a testimony to his sustained vigour. If we find them produced in a temper which is not quite that of our own time, we must also recall that the windows are the work of an artist whose influences are mostly drawn from the Victorian period, when alongside of much conventionality of outlook there was also a high standard of training and scholarship. We should not forget this very distinguishing feature in our criticisms, and Mr. Holiday is to be heartily congratulated that he is still able to set so good an example of this patient and scholastic spirit.

Advertisement Eyesores.

WE sincerely hope that the well considered action of the Bromley magistrates in ordering the removal of a great advertisement hoarding near Orpington, and imposing a fine for its erection will be followed by other authorities, and thus gradually purge our suburban and rural landscape from the increasing number of such eyesores. It was a poor apology for this hundred-foot long advertisement that it was well designed.

The Art of Architecture

IN his claim for the rightful position of the art of architecture, Professor Baldwin Brown, in a recent address before the Edinburgh Architectural Association, laid telling emphasis on the state of art in the country during the Victorian era. He says the death of the old tradition of art in common things came prominently into view in the 1851 Exhibition, only fifty years after a time when traditions in the industrial arts was still a living thing in Western Europe. He expresses the doubt whether, with the exception of the late Queen Victoria's jubilee presents, any such collections of horrors, embodying every conceivable artistic fault, was ever brought together in the world. The address is given in full in the current issue of the R.I.B.A. *Journal*.

Professional Conduct and Practice.

THE Royal Institute of British Architects has prepared a Code for Professional Conduct and Practice, on similar lines to that drawn up by Gaudet on behalf of the Société Centrale des Architectes Français in 1895, and which has been adopted by every Society of Architects in France. A draft of this Code has been circulated to the Allied Societies and Standing Committees, for their observations thereon, and has been favourably received by the profession; the suggestions for amplification and amendment, for the most part, have been adopted by the Council. With regard to the payment of fees for quantities by the contractor instead of directly by the employer, representations have been made by five Allied Societies that this practice is followed in the areas they adminster, by architects of unblemished reputation; the Council have, therefore, slightly modified the original draft to meet these cases, while reminding members that this procedure is not in accordance with the best practice; and trusts that the Councils of Allied Societies will do their best to discourage and abolish it. Save for the foregoing objection and some minor criticisms, the document has been generally approved. We give the Code on p. 143.

Holy Water Vase: Cathedral, Pietrasanta.

GENERAL NEWS.

Professional Announcements.

Mr. Sydney W. Cranfield, F.R.I.B.A., has removed from 10, Gray's Inn-square, W.C., to 16, Hart-street, Bloomsbury, W.C. Telephone: Museum 5685.

Mr. Robert Evans, Eldon Chambers, Wheeler Gate, Nottingham, has taken into partnership Mr. J. T. I. Clark and Mr. John Woollatt, who have been interested for a long time in the practice carried on by him under the style of Evans & Son, architects and surveyors. The new firm will practice as Evans, Clark & Woollatt.

The R.I.B.A. War Memorial.

The Council of the Institute invite subscriptions for the memorial to Members, Licentiates and Students R.I.B.A. who fell in the war, which it has been decided to erect on the premises of the Royal Institute.

The R.I.B.A. Model Form of Contract.

The Form of Agreement and Schedule of Conditions for Building Contracts has been revised by a Committee of the R.I.B.A. with the assistance of their legal advisers, and the document is now on sale at the Institute. The form will be known as "The Model Form of Contract."

Proposed Imperial War Museum.

At a luncheon given by Sir Alfred Mond (First Commissioner of Works) to the Parliamentary Press Gallery at the Crystal Palace last week, Sir Martin Conway outlined a proposal for the erection of an Imperial War Museum on the banks of the Thames immediately adjacent to the site of the new County Hall. Such a museum, he said, would present an imposing façade to the Thames and would be a conspicuous object from the opposite side of the river. Simple monumental sculpture could be placed on the building, emblematical of the sacrifices and labour of the Empire in reaching victory. Such a building could form part of a Charing Cross improvement scheme.

Embargo on Works of Art.

A new law, says the Paris correspondent of the *Times*, modifies that of April last, which forbade the export of works of art or antique furniture dating back earlier than 1830, and also of the works of painters, sculptors, and engravers who died more than 20 years ago. A special licence is now necessary for sending such things out of the country, and this will not always be granted. When it is granted, however, the owner of the article will be taxed.

War Memorial, Stone Street, near Sevenoaks.

A Calvary has been erected in the parish of St. Lawrence, Stone Street, in memory of Captain Myles Matthews and of others from the village, who laid down their lives in the war. The memorial consists of a cross in oak, some 15 ft. high, bearing a carved figure of the crucified Christ, surmounted by a small pent, the front edge being cusped. This is placed in the centre of a circular platform paved with Kentish rag, approached by three steps, the passage to them being walled to a height of two feet with the same rough stone. In the midst of a small court is placed a "Stone of Remembrance," or mass of masonry, bearing an inscription, and the whole is railed in with iron railing. The memorial is from the design of Mr. Guy Dawber, F.R.I.B.A.

NOTES ON EXHIBITIONS.

Polish Art.

We found the Exhibition of Polish Art at the Society of British Artists a singularly interesting one. The vividness of effect, the fine colour, and telling composition of many of these works of art come with a fresh stimulus of interest to us to-day. There are amongst them a few tragic notes of the war, but, as a whole, the impression produced is one of brightness and charm, such as is found in the sketches by Frank Aurele of "Wawel Castle, in Cracow" (290), Hy. Uzieblo, of "The Tatra Mountains" (297), Lewis Lesyko of a "Street in Cracow" (125), and by Sophy Slankiewicz of "Spring Time" (248).

We have seen nothing more realistically charming than the "Mill at Sunset," by Stephen Popowski (194), or more pleasingly decorative than the "Polish Legions Marching to the Front" (239), by John Skotriscki. Two brilliant sunshine effects are the square and the market-place in Warsaw (41 and 42), by Sophy Dyiurzynska. A strong sense of decorative effect is in the works by M. Wawrzyniecki in 302–8. The "Fright" (303) is quite a masterpiece of panel decoration, and all these pieces have a singular force. Our readers should, however, be specially interested in such fine portrayals of architecture as the "Bernradin Church" (93), the "Old House in Lublin" (99), "Banks of River Vistula" (94), and the "Cracow Gate" (96), by Bronislas Kapczynski, and other graphically depicted architectural subjects in Nos. 50, 89, 68, and 148.

If many of the larger pictures do not appear of a very high order of merit, we may at least see in the exhibition, as a whole, a promise of much good work in the future if the virility here evidenced is directed into right channels.

The Owen Jones Prizes.

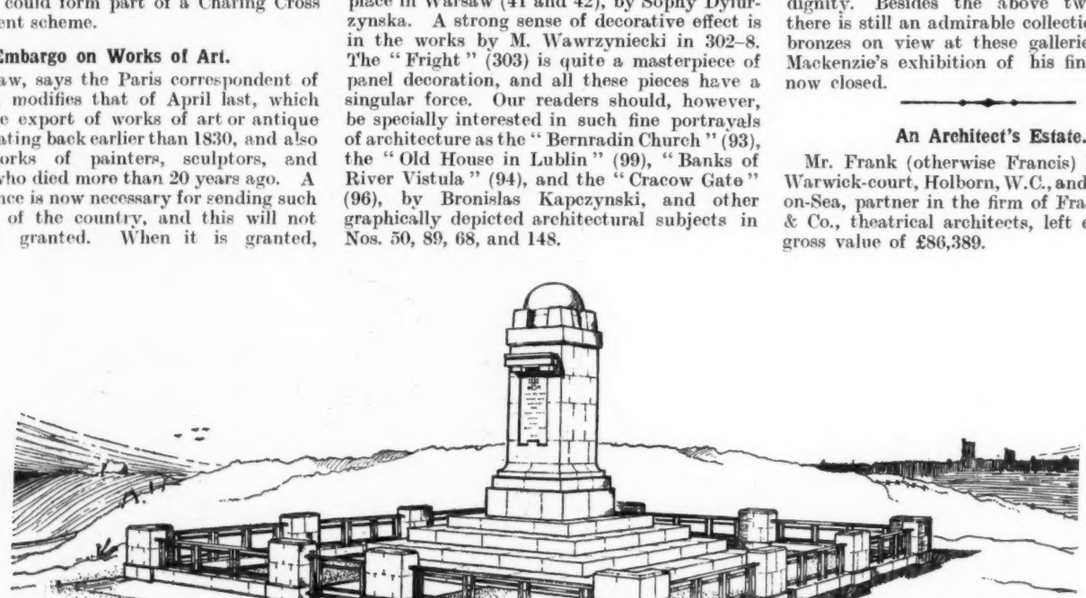
It looks as though the Owen Jones prizes, issued by the Society of Arts, had this year rather gone a-begging. We were much disappointed with the exhibition in a small gallery at the Victoria and Albert Museum, for there is nothing shown which rises above a mediocre quality. In fact, the colour sense of most of the exhibitors would appear to be very much at fault. An exception to the average is found in the embroidered bedspread by Margaret E. Bayley (Northampton), which is excellent; it has a good all-over effect in colour with much agreeable modulation, but the panel divisions of the design are rather hard in effect. The design for printed fabric by Dennis Arnold (Leeds) merits its prize. One of the designs for brocade by F. Wright (Macclesfield) is excellent and is rightly commended, but we cannot follow the awards of commendation for other designs, some of which appear to us quite distressful in colour. The designs for wrought iron gates are very poor indeed, and do not merit exhibition.

The Fine Art Society.

The Fine Art Society's Galleries will, it is to be hoped, welcome more such exhibitions as that of the old Irish glass by Mrs. Stannus, which appears to have proved of interest to a large number of visitors. If high-class craftsmanship were made welcome in our picture galleries in periodic shows we should, perhaps, see more definite advancement in the auxiliary arts; to the architect and his clients such exhibits would be of the greatest value. The gaiety of Mr. Tom Mostyn's Garden of Enchantment may seem too exuberant to many, but we believe some of them, such as Nos. 3, 21 and 12, suggest that with a more restrained palette he would produce something of enduring dignity. Besides the above two collections there is still an admirable collection of modern bronzes on view at these galleries. Mr. Tait Mackenzie's exhibition of his fine bronzes is now closed.

An Architect's Estate.

Mr. Frank (otherwise Francis) Matcham, of Warwick-court, Holborn, W.C., and of Westcliff-on-Sea, partner in the firm of Frank Matcham & Co., theatrical architects, left estate of the gross value of £86,389.



Memorial on Hill 60, Belgium.

[A site for this memorial has been acquired on Hill 60, a well-known point on the hills to the south-east of Ypres, and the scene of much heavy fighting during the war. The Queen Victoria Rifles (9th London Regiment), one of the oldest London Territorial Regiments, was in the trenches in France in November, 1914, and served on that front throughout the war. Hill 60 has been chosen as the most suitable site for the memorial, as it was here, in April, 1915, that the first battalion of the Regiment was engaged in its first serious fighting, although it had done the usual routine of trench warfare throughout the previous winter. The memorial will be executed in unpolished granite obtained from the ruins of Ypres, and will have a simple commemorative tablet in bronze. The design is by Mr. C. H. Rose, A.R.I.B.A., who served with this Regiment, and the work will be carried out by a Belgian firm of contractors.]

CORRESPONDENCE.

An Ideal Public House.

SIR,—My youngest son being a competitor in this competition, and having read the remarks in your issue for the week before last upon Mr. Curtis Green's award, may I be allowed to draw your attention to the notes attached, as it seems to me to be far from fair and just to issue conditions for the competitors and then to award quite outside those conditions?

J. H. VINCENT.

Conditions.	Prize Design.
Clause 18.—*Two* frontages.	*One* frontage only and a dead end.
Clauses 16 and 19.—*Two* floors only.	*Three* floors.
Clause 15.—*One* chimney stack.	*Two* chimney stacks.
Clause 5 and 6.—Compact service	Tremendous service.
Bar with direct view all entrances.	Bar—view of entrances only visible from certain parts.

Distinct disadvantages:—Women's w.c., lighted from covered way—would this be allowed by any Council?

Manager's Office practically hidden from any view.

Manager's entrance right at the back, so taking up a large space around two sides of the house for private way.

Coals also have to be taken to the back.

Urinals not convenient from *all* bars.

Heating chambers placed directly next to wine cellar.

The Colour Competition.

SIR,—We have read with interest your remarks on our Colour Competition in your "Notes" of last week's issue of *The Builder*, and we hasten to correct a mistake which has been made by you in stating the number of drawings received amounted to only 60, whereas the number of completed and covered drawings sent for assessment to the eminent gentlemen who kindly consented to adjudicate was over 600.

The task, therefore, of the judges in allocating the prizes was by no means an easy one, as you suggest in your "Notes." Sir Reginald Blomfield, R.A., M.A., Litt.D., F.S.A.; Sir Edwin Lutyens, R.A., F.R.I.B.A., Sir David Murray, R.A., P.R.I., H.R.S.A., Sir William Richmond, R.A., K.C.B., D.C.L., and Mr. Frank Brangwyn, R.A., were so very kind as to give a considerable amount of time, individually and collectively, in allocating the various prizes, and their final decision seemed to be met with general approval.

The particulars of the Competition were sent to every architect throughout the Kingdom, headmasters of Art Schools, and to a selected number of building firms, and in response to these, applications were received for drawings amounting to over 2,000, so that so far from being unsuccessful, we think you will agree that the competition was popular. As a matter of fact, we feel so encouraged by the success of the Competition that we intend later to organise a further one in some shape or form for interior colour schemes.

We enclose herewith for your information a verbatim report of the short addresses Sir David Murray and Sir Reginald Blomfield were kind enough to give on the occasion of the presentation of the 100 guineas and other prizes to the successful competitors; these you are at liberty to use as you think best, as possibly some extracts from the ideas of these eminent men might interest your readers.

If you would be so kind as to correct your Note in your next issue we shall esteem it.

THOS. PARSONS & SONS.

[We referred to the 60 designs which were exhibited, but as over 600 designs were submitted the attraction of the competition has proved greater than we supposed. We still think, however, the task of finding the best designs must have been an easy one.—ED.]

The Proposed War Memorial at York Minster.

SIR,—How terribly justifiable is the biting cynicism of your correspondent, Mr. Edward Vale, not only as regards the dreadful "Pylon" proposal—killed, happily, by ridicule—but as touching the appalling and execrable vandalism and bad taste of this progressive and enlightened age, which, in the blatant hideousness and incongruity of many of its architectural—and more especially monumental—efforts bids fair to rival the worst periods of the eighteenth and early nineteenth centuries.

The publication, in your last issue, of the details of the site for the proposed war memorial in York Minster shows another, and even worse, phase; is it possible that the tragic mistakes of the past (of which the monuments in Westminster Abbey are, of course, the most flagrant example) have not yet been taken to heart, and that it is proposed still further to destroy the dignity and repose of this beautiful "blind" arcading by the insertion of yet another incongruous memorial tablet or plaque?

I mean by this to cast no aspersions on possible competitors, but to submit that no such memorial, however simple and however beautiful in itself, can do otherwise than ruin the appearance of the surrounding arcading; even the photograph which you publish clearly shows the cruel havoc already done. It is difficult to conceive anything more ghastly in its way than a beautiful Gothic arcade with its openings filled with memorial tablets, all of different designs, mostly classic, and generally vying with each other in ugliness; if we must smother the country with war memorials, cannot we, at least, give them sites to themselves, and leave our grand old Gothic work alone?

It is surprising and distressing to see the names of the assessors—eminent men in the architectural world, one of whom, at least, is well known for his Gothic work—allowing themselves to be associated with this proposed further desecration of one of our noblest cathedrals.

SHERARD J. H. PRYNNE, A.R.I.B.A.

London.

The Housing Problem.

SIR,—There is one point in Mr. Tarrant's letter in your issue of the 15th ult. against which I should like to make an emphatic protest. He makes suggestions which, he says, "would be a great encouragement to the grocer, butcher and other tradesmen generally to invest their savings in a few cottages for others to occupy." Now, whatever is the best solution of the problem, I am sure we do not want to return to this method of housebuilding. Anyone who has dealt with inspection work under the local authorities, or otherwise come into contact with small property, will, I am sure, agree with me that the small tradesman usually makes the very worst type of landlord. He plans poorly and builds poorly, spends the minimum on repairs and expects the maximum of rent. In fact he treats housing as he would his business—as something out of which to make the most money at the minimum of outlay.

F. G. COATES, M.S.A.

Costing for Housing Work.

SIR,—I should deem it a favour if you would be good enough kindly to allow me space to explain a few points with reference to your review of my book, "Concise Costing for Housing, Based on an Improved System of Quantity Surveying." The subject is of very great importance at the present time for four especial reasons:—(1) Housing in general, and the conditions that govern tendering, and the execution of these contracts; (2) the adjustment of price variations due to increases in materials and labour on contracts; (3) the new National Building Code in relation to one of its underlying principles, viz., the establishment of a national standard system of quantity surveying; and (4) the high cost of materials and labour, which have turned things of minor moment of pre-war days into large affairs of to-day, *i.e.*, a small loss on some portion of a contract is now multiplied to such an extent as seriously to affect the contract as a whole.

It will be apparent that some system of costing is essential in building works if a contractor must know "where he stands," and as a proof of this numbers of contractors are now adopting some system of costing whereas formerly they relied merely upon their yearly balance sheets. Nowhere in my book does it suggest, as you imply, that "costing" of itself will cheapen building. Costing is only a means to an end—to serve the purposes of administration. It is in the right use of costing that its value lies. Like the surgeon's knife, it is of no use without the operator. Put the knife into the hands of a skilful and dexterous surgeon, and he will perform wonders, but without implements even he is helpless.

The building trade is "sick," and all I have done, as the physician would do under similar circumstances, is to diagnose the disease and prescribe the remedy, and counselled the patient that if he goes on doing as he has been doing he cannot hope to be anything but "sick." My remedy is that he must take to "costing," but to enable him to do so he must change his mode of life of indifferently masticating the indigestible stuff in the form of the present day bills of quantities, although you think my system will not replace with any advantage the present one, premising always a proper contract and a properly prepared bill of quantities. But the federated builders answer to the contrary, judging by their new Code, as they imply that there was not a proper form of contract, nor any properly prepared bill of quantities, inasmuch as they propose a new contract form and to set up a national standard system of quantities, which, when set up, shall only be prepared in accordance therewith by recognised independent and competent quantity surveyors. The system that I have propounded, and which I have used in various parts of England, Scotland and Wales, is in its scope and character suitable for national use. One advantage—and a practical test—is the keenness which contractors exhibit in their desire to tender on quantities prepared on my system. This becomes obvious when it is realised that it ensures greater accuracy in estimating. In every instance for building works—quite a number—varying from a few hundreds of pounds to over one hundred thousand pounds, the difference between the lowest and highest tenders was less than 10 per cent., thus proving that not a single contractor who tendered was very far wide in his estimate of the value of the work in every case. This almost gives ideal results—close but fair competitive tendering.

Further, Sir, these results go to prove that they have overcome to a large extent that "unreliability" in estimating the labour costs, and this without the benefits of "costing" which, I am firmly convinced, when it has become the general practice, will make risks arising out of estimates of labour practically negligible.

T. SUMNER SMITH.

Manchester.

Joint Sports.

SIR,—I am very keen on unity, and if sport will assist, I would do my part in the only game I know. I should be willing to meet any member of the Society of Architects personally, or to arrange a team of four, to shoot at Bisley, at 500 yards with the Service rifle, under N.R.A. conditions, on a Saturday in September or October; 5 rounds practice, 10 rounds to count.

I would lunch the other side at the Middlesex Hut.

R. LANGTON COLE.

23, Throgmorton-street, E.C.2.

ACOUSTICS OF BUILDINGS.

By H. BAGENAL, A.R.I.B.A.

IN *The Builder* for May 28 the sound-absorbing capacities of building and upholstering materials were examined, and their co-efficients as derived from the Harvard experiments were given in table form for the pitch C4. It is necessary to consider not only the amount of absorbing material in an auditorium, but also its position. This applies specially to the added absorbents, such as curtains or felt-panels introduced for the purpose of reducing reverberation to a given figure. Their position should enter into the design of the auditorium.

From first principles the bounding surfaces of an auditorium can be divided into three classes :—(i) Useful reflecting surfaces near the source of sound, such as walls around the platform and surfaces at an angle over the speaker's head, which should be employed to deflect rear and lateral sound rays in the direction of the audience ; (ii) useful reflecting surfaces near the audience, such as side-walls, splay walls and low ceiling surfaces, which should be used for reflecting purposes when the reflections caused shall be ascertained to be, on the whole, not mischievous ; (iii) definitely mischievous surfaces, such as the rear wall of the auditorium (behind the audience), aprons of galleries, smooth projections, fascias and pendentives remote from the source of sound, domes, lofty ceilings, and hard floor areas remote from the source of sound, all of which must, from their position, cause reflections which are harmful. Obviously the place for installing added absorbing material is on mischievous surfaces such as the rear wall of the auditorium, where it can serve the double purpose of eliminating those surfaces as reflectors and at the same time of contributing to the absorbing power of the room. It is possible to eliminate undesirable surfaces as reflectors by another method than that of covering them with absorbent material—namely, by roughening them by means of ornament and relief. A surface thus roughened tends to *diffuse* sound rays somewhat in the manner in which a white surface diffuses light rays. This practice is a tradition in theatre building and certainly minimises the risks of echoes and local redundancy. But where a serious echo exists and the reflecting surface is located it should be padded, and the reflected rays will be thereby actually eliminated or so reduced in intensity as to be negligible.

In designing an auditorium, sound paths should be plotted on the plans and sections to discover whether reflections from given surfaces are useful or harmful. After a little practice certain surfaces will be detected as obviously the one or the other. The principle employed is that at any point in an auditorium there should not be too great a discrepancy in length between the *direct* sound ray to that point and any ray reaching the point *after reflection from distant surfaces*. Too great a discrepancy in length between the direct and reflected ray leads to a time interval between the perception of sound conveyed along the direct path and that conveyed along the reflected path. The shortest time interval detected by the ear is one-fifteenth of a second, during which time a sound will have travelled, approximately, 70 feet (taking the velocity of sound at 1,100 feet per second). Hence the reflected path to a given point must not exceed the direct path by more than 70 feet. The time, one-fifteenth of a second, is the minimum that can be detected ; if the total reflected path is so long in comparison with the direct path that more than that interval elapses, say quarter-second or half-second, then the interval will be even more marked and what is called an echo will be the result. Seventy feet then is the maximum excess of length permissible.

An illustration of a reflected path not exceeding the direct path by the maximum and, therefore, being useful rather than harmful, is given in diagram 1. Consider a point L, where a listener might be sitting. The direct path from the speaker at S to the listener at L is the straight line S L. A reflected path among others from an angle surface over the speaker's head has been also drawn out and is represented by the line S K L. In this case by measurement S K = 23 ft., K L = 71 ft. ; the total reflected path is therefore 23 + 71 = 94 ft., which exceeds the direct path (by measurement 68 ft.) by only 94 — 68 = 26 ft., which is well within the permissible limit.

In diagram 2, a harmful reflected path is illustrated, namely, the path S_1T R L, involving one reflection from the ceiling and one from the rear wall. Here S_1T = 56 feet, T R = 21 feet, R L_1 = 49 ft.; the total reflected path, therefore, is 126 ft. The direct path to the point L_1 is only 26 ft. Hence the excess of the reflected over the direct in this case is 126 — 26 = 100 ft., which is more than the maximum permissible. The reflecting surfaces that cause it are, therefore, harmful, and unless means are taken to eliminate them a redundancy of sound is likely to occur at the point L_1.

From this fact, namely, the redundancy of sound due to the excessive length of reflected paths, there follow two cardinal points in acoustic design : first, the necessity for eliminating all longitudinal reflections from an auditorium by covering the rear wall with an absorbent material, and secondly, the rule that no ceiling surface directly over a speaker's head or any wall surface directly behind him should be more than 35 ft. distant from him. This distance of 35 ft. ensures that the reflected sound that returns upon himself or upon members of the audience immediately in his proximity will not be longer than approximately 35 + 35 = 70 ft., and will not, therefore, cause redundancy of sound on the platform or in the front seats of the audience. In large auditoria, for the speaking voice if no rostrum is provided, an area of five or six feet square should be marked out on the centre line of the platform upon which the speaker addressing the audience should stand. From a mean point on this area sound paths should be drawn out on plan to all reflecting surfaces in the auditorium, and their directions ascertained. Similarly on section from a suitable point sound paths should be carefully traced. By this means, splayed side walls and sloped ceiling surfaces can be designed to give the maximum amount of useful reflections. Sound paths can be plotted exactly like paths of light, the angle of incidence being equal to the angle of reflection and both making equal angles to a line drawn normal to the reflecting surface. If limiting paths are plotted, that is to say, the path at either extremity of a surface shown on plan or section, the whole beam of sound due to that surface can be shown; and since sound travels at uniform velocity the total length of each path covered at a given instant will be the same and its position at that instant can be shown. Diagram 1 represents a simple auditorium in section, and shows the position of beams of sound as reflected from useful surfaces after the lapse of (approximately) one-twentieth of a second. The surfaces causing the reflections are distinguished by marking, and the beams themselves are represented by the shaded parts of the diagram. Their fronts consist of a series of arcs advancing into the auditorium. The foremost arc, which has reached half way up the gallery is, of course, due to the direct sound which has up to the instant not met with a reflecting surface, and the other arcs are following it within the permissible 70 ft. range. In one-twentieth of a second sound will have travelled approximately a distance of 60 feet and each arc, therefore, represents one struck from a 60 ft. centre. Diagram 2 represents reflections from harmful surfaces after a slightly longer lapse of time, nearly one-twelfth of a second. This illustrates the dangers of rear walls causing redundancy in front seats. The beam caused by reflections from the ceiling and from the rear wall behind the gallery can be seen returning upon the front seats and stage. In the same way the danger due to lofty ceiling surfaces above the speaker's head can be seen ; the reflected path from such surfaces to the front seats and to seats on the platform tending to be greatly in excess of the direct path. By comparing the two diagrams the value of sloping such surfaces is illustrated. By comparison also will be seen the value of relative parts of the ceiling surface. By roughening the entire ceiling with elaborate coffering, sound would be diffused from its whole surface in all directions rather than reflected, as shown, partly usefully and partly harmfully. A good method is to employ the useful part as a smooth reflector in such cases as this where it can be shown to be valuable and to decorate the parts that are harmful.

Sound rays do not, as a fact, travel in as undeviating straight lines as light rays, and, therefore, sound shadows cannot be said to be clearly defined ; but the direction of sound due to all-important surfaces can be easily located and must be carefully considered in acoustic design. The aim of the designer should be so to adjust his useful reflecting surfaces as to concentrate sound rays on the rear seats of the auditorium where they are required to re-inforce the sound derived from the direct ray.

In designing an auditorium, therefore, an architect should bear four main points in mind. First, he should decide within the nearest limits what reverberation is likely to be suitable for his requirements. His second point is to consider his audience. It has been pointed out that the audience is by far the largest absorbing factor in an auditorium. The size of audience and the number of upholstered seats provided will probably determine 80 per cent. of the absorbing material at his disposal. Where two or more galleries are provided the absorption derived from the mere fact of the accommodation may be quite sufficient for purely musical purposes. Steeply sloped galleries will often considerably lessen the area of mischievous rear wall which has been alluded to as requiring elimination ; but in every case this rear wall should receive special attention and the absorb-

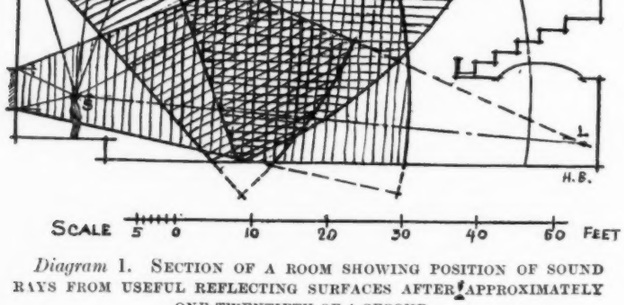


Diagram 1. SECTION OF A ROOM SHOWING POSITION OF SOUND RAYS FROM USEFUL REFLECTING SURFACES AFTER APPROXIMATELY ONE-TWENTIETH OF A SECOND.

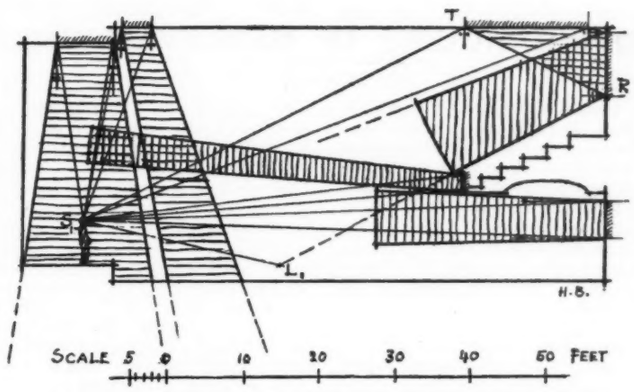


Diagram 2. SECTION OF A ROOM SHOWING POSITION OF SOUND RAYS FROM MISCHIEVOUS REFLECTING SURFACES AFTER APPROXIMATELY ONE-TWELFTH OF A SECOND.

ing material applied to it should be reckoned in with the first calculations. The third point is the actual designing of useful reflecting surfaces. Having sketched these, the fourth point is the consideration of volume. When the volume is ascertained from the sketches the first data are then forthcoming for applying Sabine's formula for ascertaining the reverberation actually caused by the accommodation. It is possible, then, to calculate how much added absorbent is required to reduce the reverberation to the desired figure. Or; if a trial and error method is adopted, two factors can be adjusted: the volume can be increased or diminished by raising or lowering the ceiling, or surfaces can be allocated to receive curtains and felt panels.

We have seen that ceilings should be kept low for purposes of useful reflections, and in the matter of reverberation it must always be remembered that the smaller the volume the less the absorbing material necessary for a given reverberation.

In cases where the reverberation, owing to large audience and seating accommodation is thought to be too short for good musical effects, then resonance can be resorted to and thin wood sheathing will increase the intensity of the sound without materially increasing the reverberation. The following table gives a list of auditoria that have been so far analysed acoustically.

Name and Place of Auditorium.	Volume in cubic metres.	Volume in cubic feet.	Reverberation in seconds. When empty.	Reverberation in seconds. Half audience.	Reverberation in seconds. Full audience.	No. of Audience.
Large, Hall, Trocadero, Paris	63,000	—	2.0	—	1.45	4,500
Amphitheatre, Sorbonne, Paris	13,600	—	2.5	—	0.95	3,000
Amphitheatre Richelieu, Paris	6,000	—	1.85	—	0.95	800
Physics Lecture Room, Sorbonne, Paris	890	—	1.35	—	0.62	250
Gewandthaus, Leipzig	11,400	407,000	—	—	2.3	1,517
New Concert Room, Boston	18,300	634,000	—	—	2.31	2,579
University Auditorium (old condition), Illinois	12,000	—	9.8	—	2.7	1,200
Do., (new condition)	12,000	—	—	—	1.9	1,200
Hill Memorial Auditorium, University of Michigan	—	800,000	4.0	2.4	1.7	5,000
Auditorium, University of California ..	—	—	3.0	—	1.6	1,000
Pathological Lecture Room (old condition) Cambridge	800	—	5.3	—	—	120
Do. (new condition), ...	800	—	1.4	—	1.0	120

Chamberlain Statue for Parliament.

The model bust of the statue of Joseph Chamberlain has met with the approval of Mr. Austen Chamberlain and other members of the family who have seen it. The height of the statue, which is to be carried out in Carrara marble, will be 7 ft., and on the same scale as the Harcourt monument, which will face it. The work is being executed by Mr. John Tweed.

PROFESSIONAL CONDUCT AND PRACTICE.

THE Council of the Royal Institute of British Architects have approved the following document, and have ordered it to be printed in the "Kalendar" in place of the Resolutions on Professional Conduct on page 60 :—

Professional Conduct and Practice.

In order to place on record the considerations which govern the conduct of honourable Architects and the customs accepted and observed by the Architectural Profession, the Council of the Royal Institute of British Architects declares the practice of Architects to be as follows :—

I.

PERSONAL AND INTER-PROFESSIONAL OBLIGATIONS.

1. The Architect is both an artist and a technician. He designs the construction, the internal and external proportions, arrangements, decoration and accessories of buildings, directs their execution and regulates the expenditure upon them.

2. The profession of Architecture is liberal and uncommercial. It is incompatible with the business of a contractor, manufacturer, dealer in (or agent for) materials used in buildings, or of an auctioneer or house agent.

3. An Architect is remunerated solely by his fees, and is debarred from any other source of profit in connection with the works and duties entrusted to him.

4. An Architect who owns, or has a commercial interest in, any material, device or invention used in building informs his client thereof and obtains his sanction before permitting it to be used in works executed under his direction.

5. An Architect does not act as a tradesman or broker; and accepts no business which involves his giving or receiving discounts or commissions.

6. An Architect does not publicly advertise, nor offer his services, by means of circulars or other means of publicity employed in trade and commerce. But he may publish illustrations or descriptions of his work, since these contribute to the common fund of knowledge. He may exhibit his name on buildings in course of execution (providing it is done in an unostentatious manner) and may sign them when completed in a way similar to that adopted by sculptors of repute.

7. An Architect declines to obtain work or clients by means of presents, commissions, reductions of his fees, or inducements to agents and subordinates. He refuses all secret dealings with regard to a client or a prospective client.

8. He abstains from seeking in any way the clients of another architect or the appointments held by him. Should he be called upon to accept such clients or appointments by reason of the death, retirement, or rightful termination of the employment of another architect, he considers himself the guardian of the honour and interests of his predecessor.

9. An Architect recognises the professional standing of his brother architects, and admits the right to that title of all who honourably exercise the profession. He is careful to observe towards them the courteous consideration due from one artist to another.

10. The copyright of an architect's design is the property of the author, and is scrupulously respected by other architects. His knowledge and experience should nevertheless be always at the service of his profession.

11. When an architect employs other architects as draughtsmen or assistants he gives them his aid and counsel and treats them with the consideration proper to members of the profession.

II.

OBLIGATIONS TOWARDS CLIENTS.

12. The architect devotes his whole ability to protecting the just interests of his clients. He uses all his knowledge, skill, and experience in designing the buildings entrusted to him, directing their execution, regulating the expenditure upon them, and giving his opinion and advice.

13. But he does not lend himself, even at his clients' request, to proceedings calculated to infringe the rights of others, nor undertake operations which appear to him likely to injure his reputation, to compromise others, or to lead to accidents. In such cases he intimates to his clients that he finds himself unable to carry out their instructions.

14. He also notifies his clients when their alterations to proposed works are likely to increase the cost thereof.

15. An Architect is remunerated by his clients (and by them alone) by means of fees, under the conditions of engagement stated in the scale of professional charges authorised by the Royal Institute of British Architects. He accepts no remuneration or payment of any kind whatever from builders, merchants and buyers or vendors of land or property, under contract with his clients unless with their full knowledge and approval.*

16. In connection with current repairs, administration, and other matters in which charges are made for time and services rendered, the architect usually delivers to his clients periodical accounts of his fees. For new works and for important alterations to or renovations of existing buildings, he receives interim payments on account of his fees as laid down in the scale of professional charges above mentioned.

17. An Architect declines judicial functions in a case in which he has already expressed an opinion on the subject of the dispute. When he is nominated as an assessor or arbitrator he ceases to represent his clients and acts impartially.

III.

OBLIGATIONS TOWARDS CONTRACTORS AND OPERATIVES.

18. An Architect exerts his personal influence to establish harmony, cordiality and good faith

* In certain districts it is an admitted practice for Architects who take out the quantities themselves to be paid for them through the builder.

between all those engaged upon his works. In so far as is compatible with his duty to his clients, he endeavours to save expense to the contractors and labour to the operatives, encourages them to take an interest in the work, and receives with courtesy their technical suggestions for its improvement.

19. An Architect interprets the conditions of a contract with impartial fairness as between his client and the contractor. He supplies the contractor with clear instructions, and informs him of his intentions by means of drawings, or otherwise, at as early a stage of the works as possible in order that the contractor may make favourable arrangements for their execution.

20. An Architect does not permit the insertion of any clause in tenders, bills of quantities, or other contract documents which provides for payment to be made to him by the contractor, whatever may be the consideration, unless with the full knowledge and approval of his client.

21. An Architect does not accept any discount, gift, or business commission from contractors and tradesmen, whether employed upon his works or not.

22. Unless specially so requested by his clients, he does not undertake the payment of contractors.

23. Should an Architect have occasion to reprove a contractor or foreman, he does so in such a way as not to impair their authority with the operatives.

"LUXURY" BUILDING.

LOCAL authorities in the East Midland Area met to consider housing problems, ask for increased powers to prohibit "luxury building," and urge the necessity of adding to the numbers employed in the building trade. The East Midlands Area has the second largest number in the country of tenders let, and especially feel the shortage of labour for housing. The Conference, which was arranged by the National Housing and Town-Planning Council, has transmitted the following Resolution to Dr. Addison :—

"This Conference is strongly of opinion that the fact that not more than 10 per cent. of labour in the building trade is concentrated upon housing schemes of local authorities constitutes a public scandal calling for the urgent action of the Government. Further, the Conference is of opinion that the Minister of Health should be given full support of all local authorities in submitting legislation to Parliament—

"(*a*) to secure uniformity and equity of administration as between local authorities of the power to prohibit construction of buildings of less public importance than dwelling-houses, and to make the power more adequate ;

"(*b*) to secure the rapid and substantial increase, more especially by means of modern systems of apprenticeship and training, of the number of operatives in the building industry so as to enable the full building needs of the nation adequately to be met."

State-Aided Housing Schemes. Revised Scales of Architects' and Quantity Surveyors' Fees.

The lengthy negotiations between representatives of the Ministry of Health, the Ministry of Agriculture and Fisheries, the Scottish Board of Health, the Royal Institute of British Architects, the Institute of Scottish Architects, and the Society of Architects have resulted in a revised scale of charges for housing schemes being agreed upon and issued. The final negotiations on behalf of the architectural bodies were conducted by Mr. J. S. Gibson (for the R.I.B.A.) and Sir Charles Ruthen, Vice-President of the Society of Architects.

Another Housing Bill.

It is stated that another Housing Bill is to be introduced by Dr. Addison. The principal objects of the new measure are to authorise the extension recently announced of the builders' subsidy; to obviate the delays caused by appeals against the action of local authorities in restricting luxury building; and to enable local authorities to rent unoccupied houses.

MOVING HOUSES IN MEDIÆVAL TIMES.

BY H. LITTLEHALES.

WE know, of course, that materials were often moved and re-employed in the middle ages. The account books of mediæval builders record payments to men for cleaning both bricks and tiles, clearly for the purpose of being used again. We know, too, that labourers were employed to draw the nails from great joists, a proceeding which probably indicates the re-use of the same. An interesting fact in the destruction of Chertsey Abbey, at the time of the destruction of the monasteries, was the placing of straw on the ground to break the fall of the large carved stones as they were thrown down (Record Office Exch. Acc. 459–22). Such a precaution clearly indicates the intended use of the stones again. But the moving of a house, even in those days when many of the buildings were mainly of timber construction, can scarcely have been other than exceedingly rare. In the middle ages we know the most ruthless destruction of ancient work often took place without hesitation where rebuilding was determined upon.

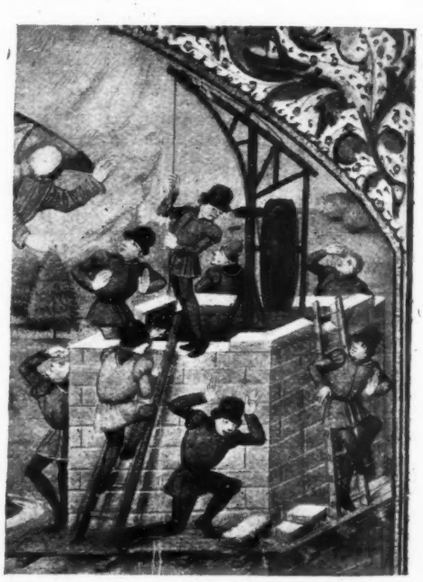
In mediæval times, however, houses certainly were moved from one site to another, for the fact is more than once plainly recorded. In a builder's account book now in the Public Record Office we find it stated that a dwelling-house was purchased for the purpose of moving it from London into Hertfordshire. The note of the removal of the house in question is set down in the expenses connected with work done for Henry VIII, at Hatfield. The book of expenses is a small volume labelled in the Record Office "Exch. Acc. 544–12," and the entry recording the purchase of the house to be moved, though unfortunately exceedingly brief, will yet probably be considered sufficiently explicit by itself alone to show that houses were moved in, at any rate, the days of Henry VIII. The entry reads :—"Item, pad for the purchessyng of a house in Newgate streate for one of the lodgis for Hatfeld woode, xx li."

It is not to be supposed that the moving of houses was at any time a common practice, but it must be borne in mind that several factors in this case contributed to the facilitation of the undertaking—the house would almost certainly be of wood, expense would not in the case of royalty be of much moment, and the distance offered no great obstacle.

In 1525 Wolsey was building his great college at Oxford and he, too, bought a house and had it taken down. The builder's accounts for the erection of the college are to be seen in the Public Record Office, and it is there recorded that the house belonged to the Black Friars, in Oxford, in which town the house appears to have been situated. This house cost £20 14s. 2d. If we may judge from the side-heading of the entry recording the purchase the house was known as Bishop John's house. Whether the purchase was made for the purpose of re-erecting the house or for the sake of the materials, or to remove it to make use of the site, is not stated.

In the curious little book known as Horman's Vulgaria, which was printed in 1519, we find a note which seems to imply that the ability to move houses intact in the middle ages was more or less well known. We read :—"This house may be remoued with trocles and slyddis. It shall be done with myght of men and oxen" (p. 245). Halliwell, in his dictionary, tells us that "truckle" means a wheel or ball underneath anything for the purpose of moving or rolling it; the word "slyddis" clearly means sledges.

In Stow's "Survey of London" is an account of the moving of a house intact by the orders of Thomas Cromwell, the minister of Henry VIII. This house was moved in the City of London and was carried intact into a garden, a distance of 22 ft. The gentleman into whose garden the house was moved appears to have been taken somewhat aback upon discovering without previous warning the unexpected presence of a neighbour's house established in his back garden. We give the account from the edition of the Survey printed in 1598 :—"On the south side, and at the west end of this church, many fayre houses are builded, namely in Throgmorton Streete; one verie large and spacious, builded in the place of olde and small tenementes by Thomas Cromwel. . . . This house being finished and hauing some reasonable plot of ground left for a garden, he caused the pales of the gardens adioyning to the north part thereof on a sodaine to bee taken downe, 22 foote to bee measured forth, right into the north of euery man's ground, a line there to be drawne, a trench to be cast, a foundation laid and a high brick wall to be builded. My father had a garden there, he had also an house standing close to his wall; this house they loosed from the ground and carried on rowlers into my father's garden 22 foot ere my father heard thereof; no warning was giuen him nor other answere when he heard thereof and spake to the surueighers of that wirke but that there mayster Sir Thomas commanded them so to doe."



THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The following business was transacted at the last meeting of the Council :—

Appointment of Boards and Committees.—The Council approved the report of the Selection and General Purposes Committee, and appointed the Committees of Council, the Board of Architectural Education, the special Boards and Committees, and the additional members of the four Standing Committees for the Session 1920–21.

Civic Survey Exhibition.—The Council appointed a Joint Committee for the purpose of organising an exhibition of Civic Survey drawings.

The Standing Committee on Water Regulations—Mr. H. Austen Hall and Mr. H. D. Searles-Wood were re-appointed to represent the R.I.B.A. on the Standing Committee on Water Regulations.

Legislation.—It was decided to take steps to protect the interests of architects and surveyors in the Government Service under the Government of Ireland Bill (1920), and to safeguard the rights of the Public under the Air Navigation Bill.

A Civil List Pension.

A Civil List pension of £70 has been granted to Mrs. Bentley, widow of J. F. Bentley, architect of Westminster Cathedral.

Leading Contents.

	PAGE
ADVERTISEMENT AND WAR MEMORIALS	137
ACOUSTICS OF BUILDINGS	142
PROFESSIONAL CONDUCT AND PRACTICE	143
MOVING HOUSES IN MEDIÆVAL TIMES	144
ROYAL INSTITUTE OF BRITISH ARCHITECTS	144
L. & N.W. RAILWAY MEMORIAL	146
GREEK AFTERNOONS AT THE BRITISH MUSEUM—VIII.	147
NATIONAL HOUSING AND TOWN-PLANNING CONFERENCE AT BRIGHTON	150
ROYAL SANITARY INSTITUTE	152
THE BUILDING TRADE	156

ILLUSTRATIONS

The Minster.

We are enabled to reproduce this charming etching from Mr. F. L. Griggs' recent exhibition at the Twenty-one Gallery.

Cottage Hospital, Towyn.

This building is now in course of erection, to the design, selected in a limited competition, of Mr. F. Howarth, of Towyn, Merioneth. The foundation stone is to be laid on August 11. The cost is estimated at about £7,000. Messrs. Hughes & Edwards, of Towyn, are the contractors.

Memorial Reredos, Church of St. Mary, Nantwich.

The design for the new reredos was governed by the desire of the donors that the work should follow closely the detail of the ancient stalls, of which the eastern bays are seen in the illustration. These stalls, of similar character to those at Chester Cathedral, are said to have been removed from another church, and have evidently been at some time taken down and re-erected in a very careless manner; all the more important carvings of the canopies have been cut away, and are now replaced by modern restorations, but the crockets and finials are in a good state of preservation, and there are some interesting grotesques in the tracery of the wall panelling under the canopies, and a fine series of boldly-carved misereres. Unfortunately, the whole has been disfigured by a coat of dark varnish, and the vaulting of canopies has been adorned with cast-metal bosses at the intersection of ribs!

The reredos is a memorial to Lieutenant George Winfred Harvey, M.C., of the R.F.A., who fell in the war. It was dedicated by the Bishop of Chester in November last. The central portion, corresponding in width with the altar, is occupied by a group of the Crucifixion with statues of the Blessed Virgin and St. John. The side portions contain statues of the patron saints of the United Kingdom. The centre niche of the tabernacle work has a small statuette of the Blessed Virgin with the infant Christ, and the remaining niches have figures of angels. Memorial inscriptions are embossed on shields of hard pewter in the tracery panels between the pedestals of the side divisions.

The whole of the work has been executed by Messrs. A. R. Mowbray & Co., to the design of Mr. J. S. Adkins, of Richmond Hill, Surrey.

The "Ideal" Public House Competition.

This week we illustrate the second premiated design in the competition organised by Messrs. Samuel Allsopp & Sons, Ltd., for an "ideal" public house. The first premiated design, by Mr. Will. Kidd, and a criticism of the designs sent in were given in our issue for July 23.

War Memorial at Droylsden.

This memorial is being carried out in Portland stone; the paving is in green slate and unpolished granite. Mr. J. Henry Sellers, of Manchester, is the architect.

COMPETITION NEWS.

Bermuda.

FOR THE DEPT. OF PUBLIC WORKS.—Design for a memorial. Sending-in day, August 31. (See our issue for July 16.)

Earby.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. Sending-in day, August 31. (See advertisement last week.)

Wakefield.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a cenotaph or similar memorial. Further particulars from the Town Clerk, Wakefield.

York Minster.

It is proposed to erect a memorial to the officers and men of the King's Own Yorkshire Light Infantry, in the aisle of York Minster reserved for war memorials, and the Memorial Committee has decided to hold a competition open to architects and sculptors. (For full particulars, see our last issue.)

Weymouth.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, in granite or marble, at a cost not exceeding £1,500. Premiums, £10 and £5. If the scheme selected is carried out, the author will receive the commission. Sending-in day, August 14. Further particulars from the Town Clerk, Weymouth.

Hackney.

FOR THE PEACE CELEBRATION COMMITTEE.—Designs for a monumental Memorial. Sending-in day, September 1. (See our advertisement pages last week.) Members of the Society of Architects are requested not to take any part in this competition until the conditions have been approved.

War Memorial Window, St. Matthew's Church, Ealing Common. By MR. REGINALD HALLWARD.

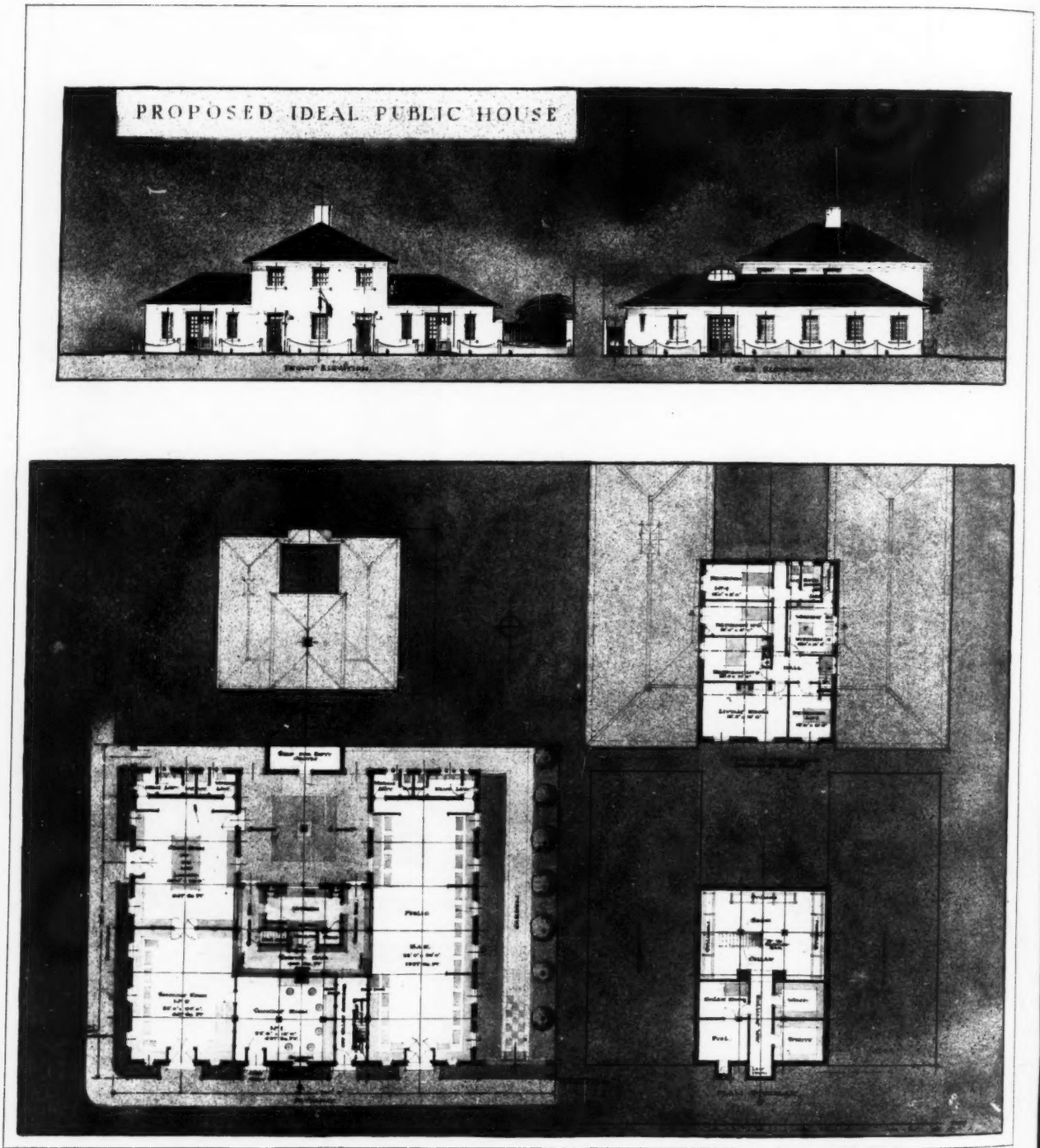
[The window illustrated is to the memory of 2nd Lieut. Charles Albert Bolter, Machine Gun Corps, and has for its subject matter three of the Beatitudes. In the left hand light, "Blessed are the Merciful," in the centre light "Blessed are the pure in heart," and in the right hand light, "Blessed are those that mourn." The three lights are surrounded with a wide border of floral character, and the colour scheme is brilliant, crimson, purple, orange and black, alternating with silver white and some stain, being the prevailing treatment.—]

PROPOSED WAR MEMORIAL AT EUSTON
TO BE ERECTED BY LONDON AND NORTH
WESTERN RAILWAYMEN IN MEMORY OF
THEIR FALLEN COMRADES

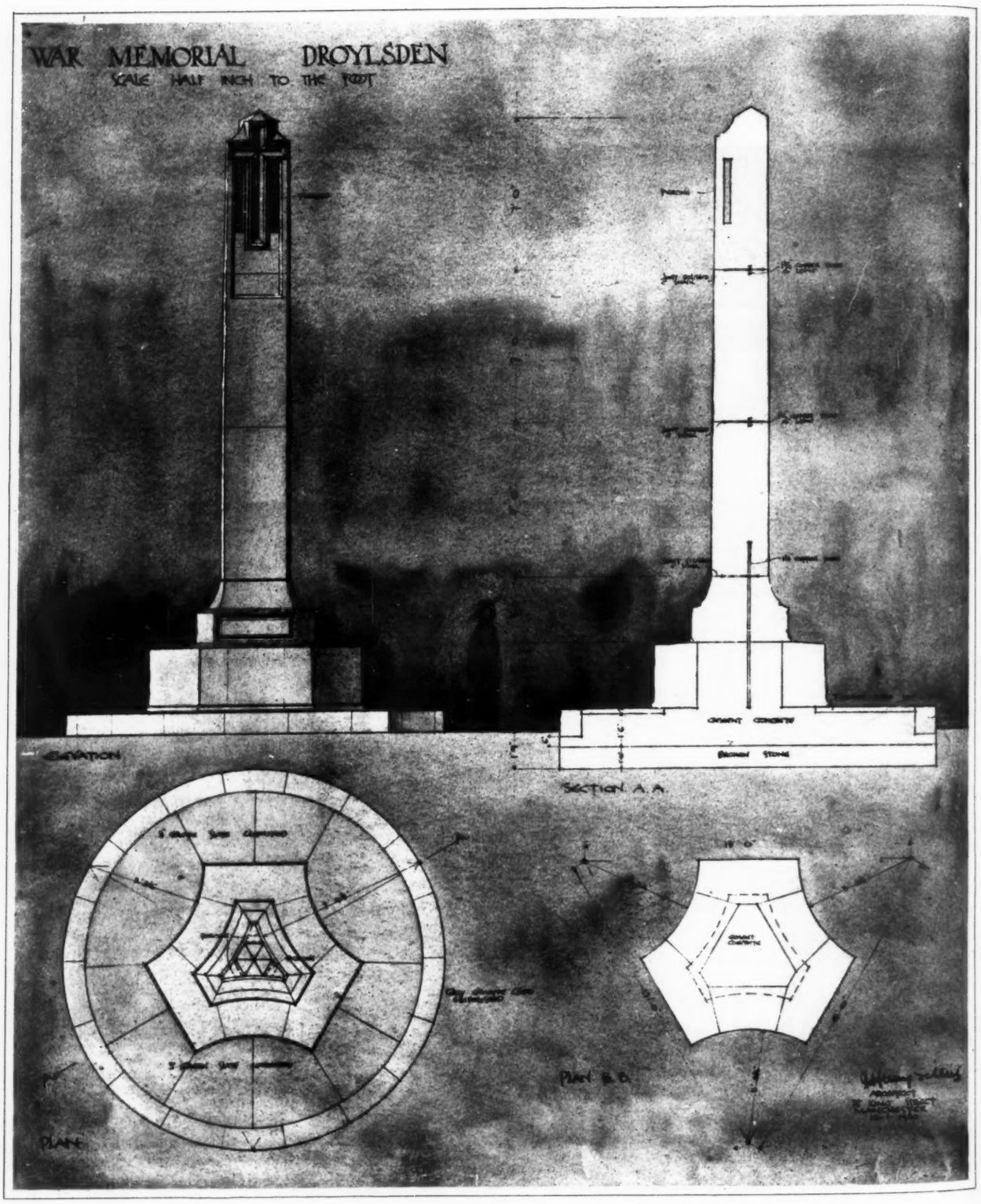
L. & N.W. Railway Memorial.

Mr. R. Wynn Owen, Architect.

A fine site has been allocated for the L. & N.W. Railway War Memorial in the centre of Euston-square, facing the station entrance. The obelisk is to be built of Portland stone with bronze figures representing the Services. The cross and wreath at the summit of the obelisk show an effective and original treatment, and no doubt the finished result of the whole will be generally approved.]



THE "IDEAL" PUBLIC HOUSE COMPETITION: SECOND PREMIATED DESIGN, BY MR. CHARLES C. VOYSEY.



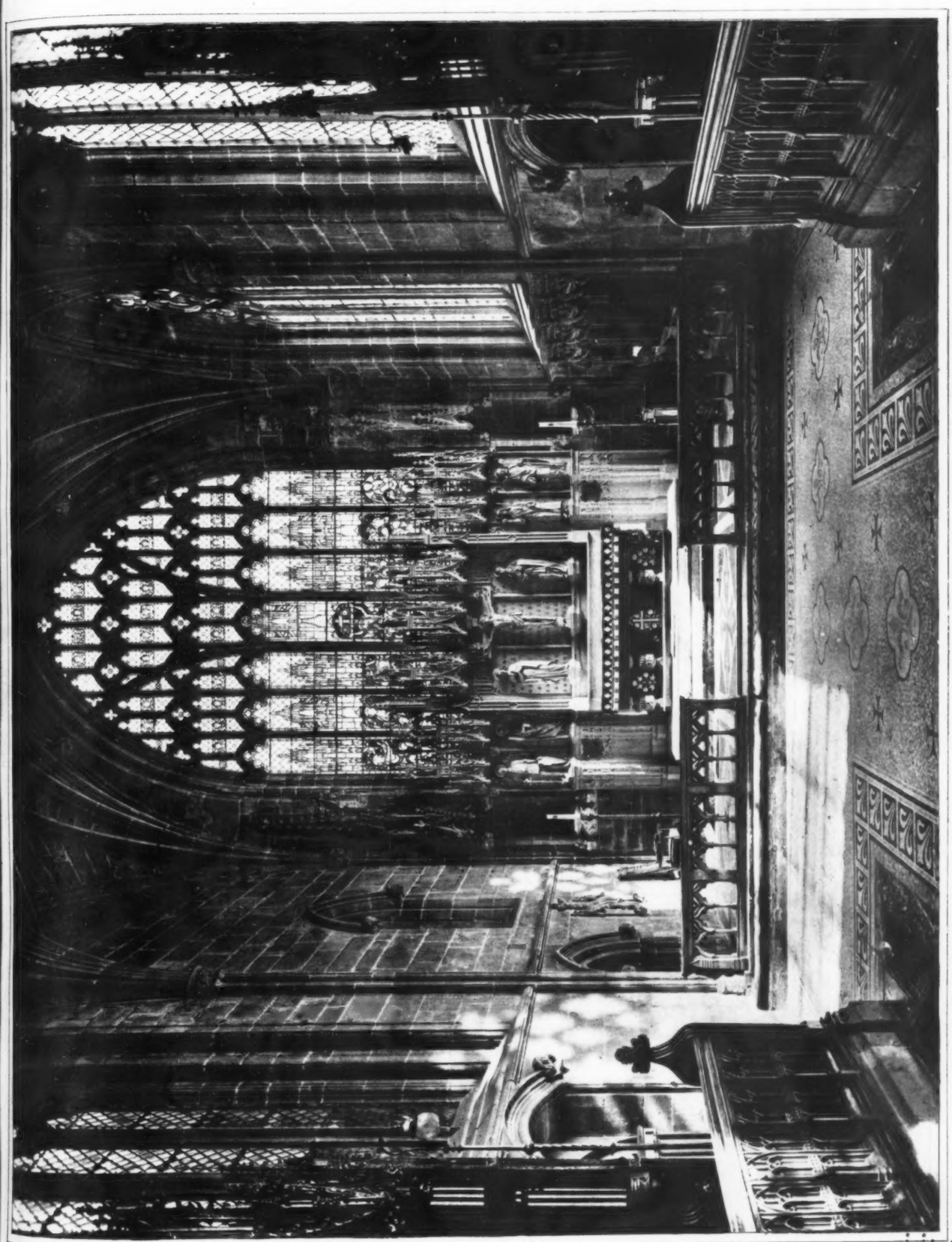
MR. J. HENRY SELLERS, ARCHITECT.

Tanquam desiderio carissimi capitis,
Hanc imaginem delineamus, necnon offerimus
In piam memoriam laudabilis numeri
(DOVCE, CLEMENT, AVSTIN, HAVTECTOR, JOHN, GABRIEL, THOMAS)
Monasterii de Oseney olim campanarum.

Quorum uocibus, pariter canentibus,
(Dum pristina felicitas sinebat)
Longe lateque æther gauisus est,
O quam suauibus. O quam iocundis.

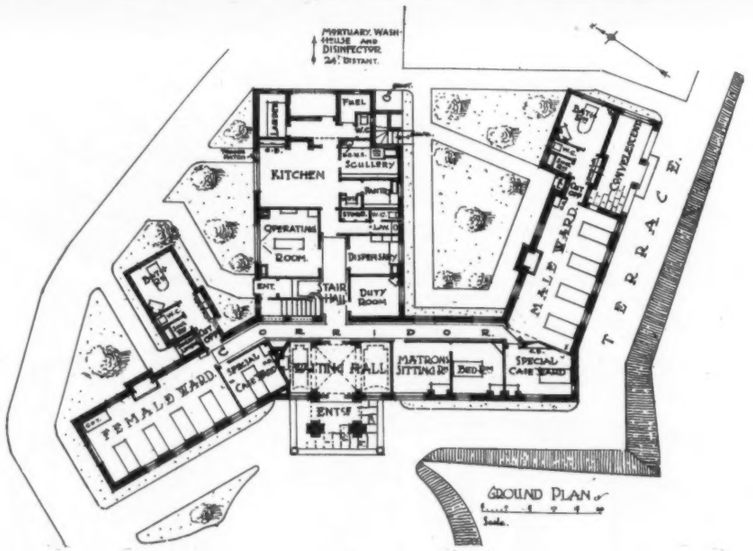
Iam nunc, heu, sæuiente diabolo,
Silentium incubat mœstiter dejectis.
Fama autem tantorum et gloria,
Adhuc, et in semper, nunquam peritura,
Resonat et resonabit. Alleluia.

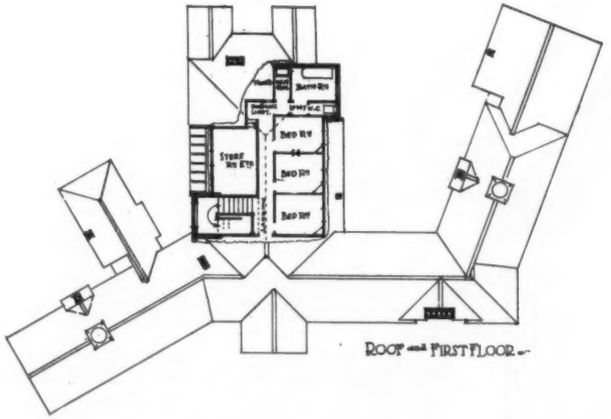
FROM THE TWENTY-ONE GALLERY EXHIBITION.

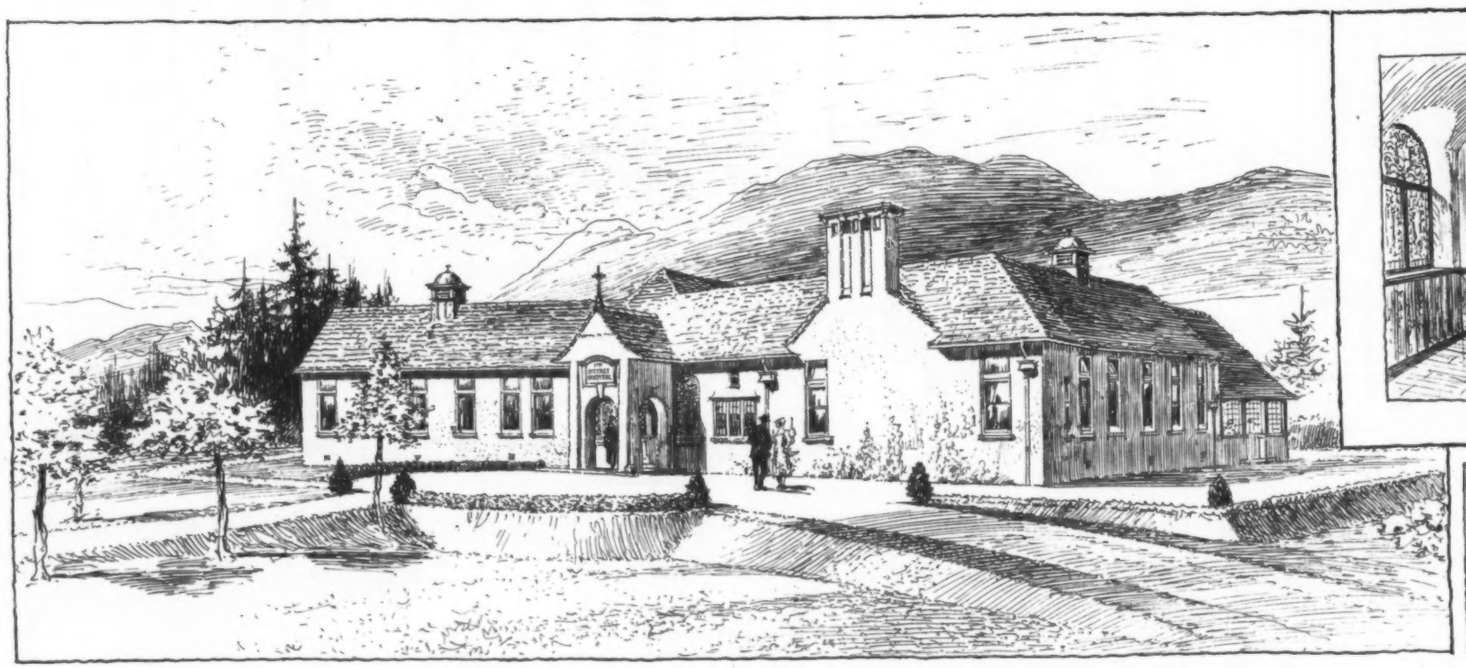


OAK MEMORIAL REREDOS, NANTWICH PARISH CHURCH. MR. J. STANDEN ADKINS, ARCHITECT.

FROM THE TWENTY-ONE GALLERY EXHIBITION.

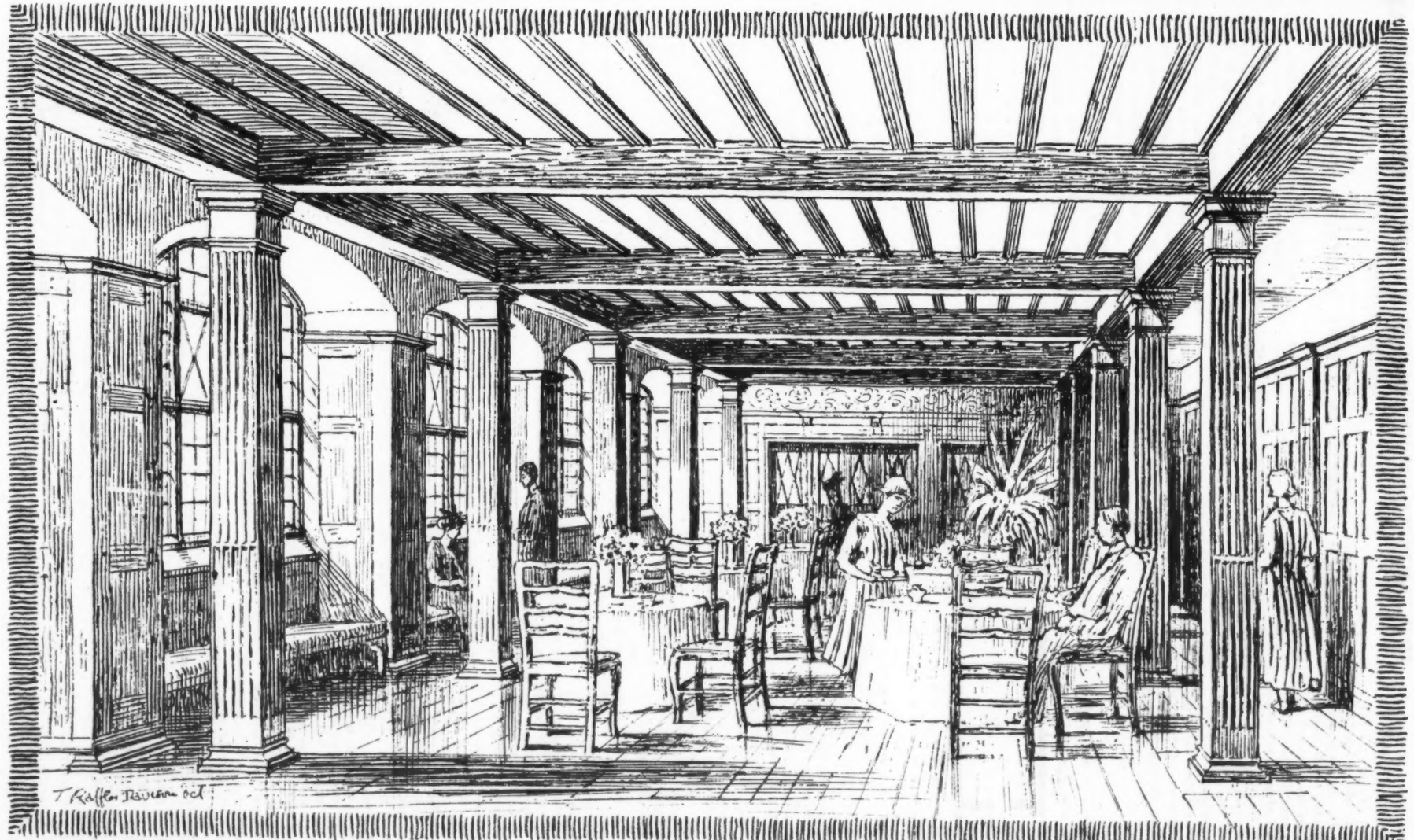






The Entrance Hall

PROPOSED COTTAGE HOSPITAL AT TOWYN
F. HOWARTH. ARCHT



DINING ROOM FOR MR. ALBERT JONES. PENLAN ST. PWLLHELI F. HOWARTH ARCH.T.

GREEK AFTERNOONS AT THE BRITISH MUSEUM—VIII.

By W. R. LETHABY.

THE HELLENISTIC TEMPLE AT EPHESUS.

Great Ionic Temples.—In the sixth century the rich cities of Ionia began to rebuild their temples on a scale before unknown. From comparatively small local shrines they became buildings of cathedral rank, in which the idea of marshalling a multitude of pillars about a central naos was worked out. The peristyles were doubled; at the ends there were even triple rows of columns, and the pronaos became a deep hypostyle hall. This idea of a forest of pillars was Oriental and Egyptian; doubtless, the ritual was amplified at the same time and stately processions moved around these avenues of columns. The Crœsus temple at Ephesus was of this type. At Samos, about 530–520, an enormous temple was built, which Herodotus speaks of as the greatest of buildings. Its plan,

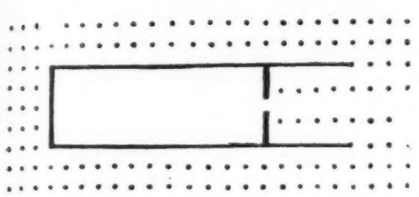


FIG. 1.

recently recovered, had double ranks of twenty-four columns at the sides and treble rows at the ends, eight in a row at the façade and nine at the other end. The pronaos was like a cathedral nave, having eight columns on either hand of the central "aisle." A diagram of the scheme is given in fig. 1. The columns were about 6½ feet in diameter. In my last article I illustrated a forgotten fragment of the volutes. I now offer a complete "restoration" of the Ionic capitals, which must have been about 10

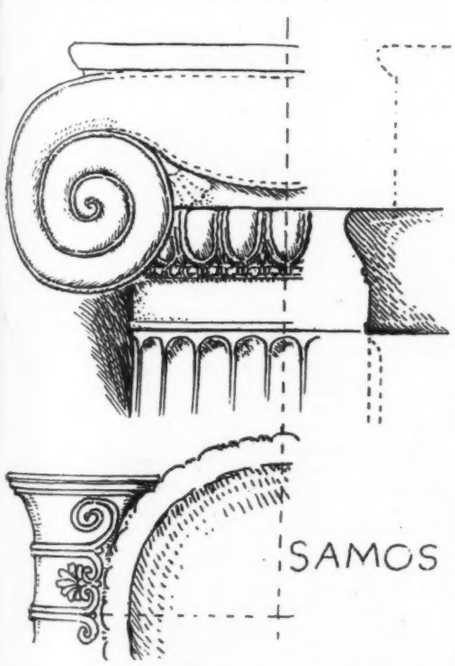


FIG. 2.

feet across (fig. 2). The Temple of Olympian Zeus at Athens, begun in the sixth century under the strong Ionian impulse of the time, on a somewhat similar plan, had triple rows of columns at the ends and double rows on the flanks. The temple at Ephesus was rebuilt on the old plan, but of increased height, in the fourth century. A great temple at Sardis, recently explored by an American expedition, was built still later, and shows the influence of Ephesus; so does the colossal temple at Branchidae, which had 120 columns of 65 feet high.

The Later Artemision at Ephesus.—In a former study of the Hellenistic temple ("Greek Buildings," 1908), I showed:—(1) That Dr. Murray's scheme of bringing the square pedestals forward to the front line of the steps was contrary to the evidence; for one thing, the platform was a great foundation "raft" on the marshy ground, and the chief bearing columns could not have been seated away from it. (2) The entablature was of the Mausoleum type and had no frieze. (3) It was improbable that the sculptured drums were placed over the sculptured pedestals, but they ranged at the same level, both being, in fact, parts of one sculptured dado. (4) The posticum probably had nine columns like that of the temple of Samos recently excavated—"Fergusson had pointed out that at Ephesus the seven very wide spans of the principal front equalled eight of the medium spans; and it seems very probable that at Ephesus, too, the back portico had nine columns like Samos" (fig. 1). A restoration of the Artemision has subsequently been published by Mr. Henderson in which he is in agreement with 1 and 2. He continues the Murray scheme of putting the sculptured drums over the pedestals, and he has objected to the suggestion that there were nine columns at the back. In regard to these objections I have offered the following considerations in the R.I.B.A. *Journal* (Feb., 1915).

EVIDENCE REGARDING A DIFFERENCE BETWEEN THE FRONT AND BACK OF THE TEMPLE.

(1) The temple was at a distance from the city towards which its façade was turned, the other end was its back.

(2) The work was of great scale and the façade had extraordinarily wide columniations; the central lintel was unequalled, and the doubt arises whether there can have been more than *one*.

(3) Pliny tells a story of a colossal lintel of this temple. The point of the story would be gone if there were several; a second would spoil the effect of the tale.

(4) Square sculptured pedestals were discovered at the façade but not at the back. This suggests that there was *some* difference between the two ends.

(5) The pedestals provided extra strength for the wide columniations.

(6) Fergusson noticed that the seven wide columniations of the façade would allow of nine columns at normal intervals.

(7) It has since been found that the temple at Samos was so planned.

EVIDENCE THAT THE SCULPTURED DRUMS WERE NOT SET ABOVE THE PEDESTALS.

(1) Dr. Murray pointed out that the sculptured drum just fitted, but the plain drums fit equally well. He put the sculptures at the bottom of the columns in the portico, but for the *front row* he put the pedestals at a lower level. Mr. Henderson sees that this is impossible, but he seeks to carry the doubling on into another design by raising all the sculptured drums. It is reasonable to suppose that plain columns were on the sculptured pedestals.

(2) The sculptures of drums and pedestals are so different that their immediate association is difficult to believe in.

(3) It is not so probable that there was some

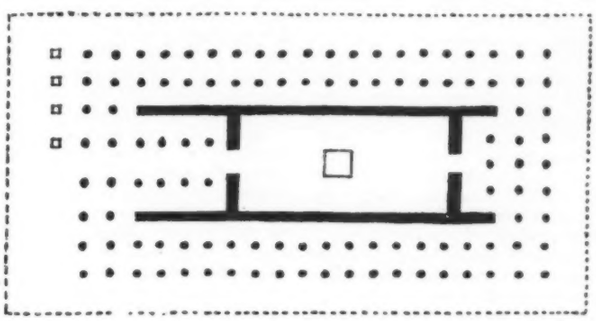


FIG. 3.

1,580 feet of sculpture six feet high, as that there was half of it.

(4) The pedestals and drums are the same height and therefore probably ranged.

(5) The moulding at the bottom of the sculptured drums was similar to that at the bottom of the plain columns. (I should put full bases under the sculptured drums as to the plain columns; the sculptured pedestals I should set on plain blocks.)

(6) The pedestals were enlargements for the chief weight-bearing columns of the façade.

(7) The design is a development of the *dado*, and no whim.

(8) There were pedestals only in front, but there were sculptured drums at the back of the temple as well. It would follow if the sculptured drums of the façade were on pedestals that the similar drums at the back were at a different level.

I would add that no fragments of such great square moulded bases as those Mr. Henderson shows under the pedestals have ever been found. Further, it would have been impossible for the high reliefs of the pedestals amounting to as much as a foot at times to have been set down on such moulded bases; the reliefs require a square member to stand on.

Pedestals under columns may have appeared here at Ephesus for the first time; the idea of sculptures around the columns was taken over from the Crœsus temple, but for the sacrificial groups something was required large enough to take an ox. The sculptured pedestal of the cult statue of Athene in the Parthenon may also have been a source.

Pliny's Account.—According to Pliny: (1) the building of the Temple occupied 120 years; (2) it was built on a marsh; (3) the whole length was 425 ft. and the breadth 215 ft.; (4) there were 127 columns, the gift of Kings; (5) which were 60 ft. high; (6) 36 of them were sculptured; (7) one was by Scopas; (8) the chief architect was Chersiphron.

(2) (3) and (6) show knowledge of the facts, and (3) (5) and (7) plainly refer to the Hellenistic temple. The excavations showed that in the main the later temple repeated the Crœsus structures, except for an enlarged platform and increased height; otherwise wall was raised on wall and column over column. In regard to (4) it has been suggested that the passage might be read: "100 columns, 27 the

gifts of Kings"; but this is more difficult to reconcile with the facts than the other. In the restoration offered in the British Museum publication there are 108 external columns. Two of these in the posticum should be omitted. Wood did not suggest these, and Mr. Henderson specifically says "the two columns shown in the posticum and the nineteen in the cella are not proved by indications on the site."—Jour. R.I.B.A., 1915, p. 130. The fact that the east wall of the naos is shifted eastward of the most nearly corresponding columns in the peristyle is evidence that Wood was right. There could not, however, have been less than 106 external columns. The temple of 100 columns thus falls to the ground. That the number of 127 was made up by internal columns disposed in a particular way as set out in the publications cannot be admitted, as Mr. Phené Spiers pointed out.

As Fergusson long ago suggested, there were nine columns at the eastern front, as the great central interval of the western façade would not have been repeated. Samos, and other reasons, raised this to a high probability, and the study of the dimensions, which shows that the basis of the whole plan was eight bays of 20 Greek feet (requiring nine columns), practically completes the proof. Such an arrangement would raise the number of columns to 109.

It should be noticed that the number of sculptured columns—36—mentioned by Pliny is perfectly suitable for the plan as now suggested (fig. 3), 18 being at each end, arranged thus: two rows of sculptured drums at the east end, and at the west an outer row of eight sculptured pedestals, and an inner row of eight sculptured drums with an extra pair in the pronaos. In fig. 3 the row of columns with the pedestals is shown (on one side of the plan) according to the suggestion made below that there was a third row of columns on the façade. The deep pronaos with its columns was, of course, roofed, but the naos remained, I have little doubt, a sanctuary open to the heavens. The ceiling of the peristyle and pronaos would have been entirely of wood.

At Samos and Sardis, and at the Temple of Zeus at Athens, there were three ranks of columns at one or both fronts (see fig. 1). At Sardis, moreover, the spacing of the columns of the façade so closely followed Ephesus that it is plain that the latter was the model followed in this respect. There is thus every probability that at Ephesus, too, there may have been a third row of columns on the façade. The great intervals called for a greater depth of columns. That this was indeed the case is confirmed by the fact that the external row of columns on the façade had the sculptured pedestals which were not repeated at the east; they represent a third row. Wood did not say exactly where the fragments of pedestals were found, but he thought they were parts of the frieze, possibly because he found them at a greater distance to the west than he could otherwise explain, for portions of a frieze might be thrown far. According to Wood nothing was found of the western platform, and Mr. Henderson agrees—"the foundations, &c., have been removed at the west end." There may be traces 20 ft. further out than was thought possible. Such an arrangement would give 21 columns on the flank, a number found at Branchidae, which imitated Ephesus in some respects; at Samos there were 24 columns on the flanks. The British Museum publication shows that there was an extension of the stylobate of the façade of the Crœsus temple, 30 ft. to the west of what was required by a double row of columns, and it is possible that there was a third row of columns on the façade of the Crœsus temple, too, and that these were the sculptured columns.

If at Ephesus there was a third row of columns on the façade, the total number would have been 117; now cxvii instead of cxxvii is a probable emendation. The evidence is not enough for proof, but it is a high probability.

According to Pliny, the columns were 60 ft. high. The diameter is full 6 English feet, and probably was 6¼ Greek feet. This dimension would have been a quarter more than the columns of the Crœsus temple, which were 5 ft. Pliny's other facts seem to be so accurate, and the standard of 20 ft. is so much in evidence in the dimensions of the temple, that it may not be doubted that the columns were indeed 60 (20 × 3) ft. The columns at the Mausoleum were 30 ft.; those at Priene 40 ft., and, according to the American explorers of the site, the columns at the temple at Sardis, which in many respects followed the lead of Ephesus, were 60 ft. high. At Branchidae the columns were 63 ft. 1 in. high, that is no less than 65 Greek feet. Fergusson accepted Pliny's dimensions even when he thought that the Greek foot was greater than the English. When I studied the question before I could not agree with this, but the amended value for the Greek foot given by Dörpfeld makes all the difference, as the height would be about 58 English feet. The epistyle is exactly 4 Greek feet; the total of the entablature was possibly 12 ft. The plinth and the disc number of the basis are each 1½ Greek feet. The ancient walling stones in the Inscription Hall are 1¾ Greek feet high.

Pliny also says that 27 of the columns were the gift of Kings, and many fragments of inscriptions dedicating the columns have been found. Doubtless the Hellenistic temple occupied the 120 years in building stated by Pliny. It seems that the particulars given by Pliny, so far as they can be verified, applied to the Hellenistic temple. It is probable, therefore, that when he says that Chersiphron was the "chief architect," that this should refer to the same structure. It has been usual to think of him as the architect of the Crœsus temple, but two facts which are recorded by Vitruvius—that he wrote a book on the order of the temple, and invented a machine for bringing the great stones to the site, seem more appropriate to the later structure. Pythios, the architect of the Mausoleum—a work contemporary with the Hellenistic Artemision—wrote a book describing his great work. Apelles also wrote a book on painting at this time; the fourth century was an age of self consciousness and of technical treatises. It is probable, indeed, that a work describing the Hellenistic temple—a world wonder—was written, and was the source of the details given by Pliny. Again, the story about the difficulty of setting the great central epistyle was doubtless told of a beam that was to be seen. It may, indeed, be doubted whether the Crœsus Temple had marble epistyles over such great spans. It is true that Strabo says that the temple built by Chersiphron was enlarged (completed?) by another; but he goes on to say that the architect of the later temple was Deinocrates. This appears to be a myth, and Chersiphron may have been pushed out of the way to give room for the name of Alexander's famous architect.

Dimensions.—According to Pliny the total size of the temple was 425 by 215 ft. ("Universo templo longitudo est CCCCXXV pedum latitudo CCXV." Some versions give 220 for the width; I follow the B.M. catalogue); and this description must apply to the Hellenistic temple. The measurements might be to the edge of the platform or the full area occupied by the lowest step. Now, Wood found the bottom steps in position, giving a width of 239 ft. 4½ in. (this is confirmed by Mr. Henderson), which corresponds with 245 Greek feet. The dimension of 215 ft. would thus be 15 ft. within the lines of the outer steps. This dimension, it may be presumed, represents the width of the platform, the 15 ft. beyond on each side being occupied by the steps. The steps were about 8 in. high; Wood says, "barely 8 in.," on p. 218, and "a little more," on p. 191. The fragment of the bottom step in the B.M. is nearly 8½ in. The total height from the court to the pavement of the peristyle was 9 ft. 5½ in. Mr. Henderson agrees. The height at the inner row of columns was an inch more; at the naos wall it was doubtless 10 Greek feet. Fourteen steps would be required to rise this height, and this is the number that Wood shows. In his first restoration he put those all in one flight with a very wide landing above; in his revised plan he separated the steps into two flights with an intervening landing, and there cannot be a doubt from the evidence that this was the true arrangement, for he found that the edge of the top step was 2 ft. outside the plinths and the peristyle. He gave ten steps to the lower flight, leaving four for the upper; but it was unusual to have an even number of steps, and flights of nine and five are much more probable.

The step in the British Museum shows a "tread" of 22 in. (1⅞ Greek ft.), and nine steps (otherwise eight treads) would require exactly 15 Greek ft. This is not only the measurement given by Pliny, but, on testing it on the plan, we find that the width of 215 Greek ft. seems to coincide exactly with the outside of the "sleeper walls" which supported the landing.

The platform then was 215 Greek ft. wide, as stated by Pliny; and as the temple itself was 160 ft. wide from centre to centre of columns, the platform width was 55 more, giving 27½ ft. on each side for landings and upper steps.

As the width of the platform exceeded the width of the temple by 55 ft., the length of the platform might be expected to exceed the length of the temple by 55 ft. also. But, according to Pliny, the platform was 425 ft. long; this would give 370 ft. for the length of the temple, but we saw that the Crœsus temple was 345, on the supposition that there were two ranks of columns on the façade. We thus have 25, which would be suitable for an extra row. The square pedestal-bases of the outer row of columns of the Hellenistic temple being more bulky than the ordinary bases, it would be desirable to have an extra 5 ft. beyond the 20 of the other outer bays. The platform was thus made 425 ft. long, instead of 400 as we might have expected (on the supposition that there were two rows of columns on the façade as in the rear); and, instead of 420 (if there were three rows of columns), Pliny's dimension for the width is certainly perfectly accurate, and his dimension for the length falls in so well with the probabilities of the case, that there cannot be a doubt of its accuracy.

On the plan (fig. 3), the extra row of columns is indicated on one side and the area of Pliny's dimensions is dotted. I conclude that Pliny's account applies wholly to the Hellenistic temple, is correct, and was probably based on the book of Chersiphron.

Sculpture.—In some notes on the sculpture in the "Journal of the Hellenic Society," I showed that the subjects dealt with two cycles—(1) the deeds of Herakles and Theseus and (2) a great sacrificial procession on the birthday of the goddess. Some columns showed priestesses decorating the temple with festoons; others, priests marching with the temple treasure; and others, citizens watching the procession. Another column was surrounded by the nine Muses. These would have been here as attendants on Apollo, and this fact leads up to the suggestion that a central group showed the newly-born Artemis and Apollo in the arms of Leto. This again suggested the possibility that a remarkable group of a woman with two infants, found at the Ara Pacis in Rome, was an echo of such a group. The probability has been strengthened by the study of this relief given in the "Journal of the Roman Society" (Vol. III), where a photograph of a similar subject found at Carthage is given, and where it is suggested that the relief had some Hellenistic prototype. The Carthage version is more Greek in style than the other, and the seated goddess is very similar to the Aphrodite of the E. frieze of the Parthenon. It seems to me that the whole scheme of the sculptures at the Ara Pacis (see Mrs. Strong's "Roman Sculpture"), was an echo of the Ephesian sacrificial procession. Mr. Guy Dickins, in his "Hellenistic Sculpture" notices the Ionian affinities of the Roman work.

The sacrificial procession was the most universal of subjects. The frieze of the Parthenon and the sculptures of the Artemision mutually explain each other. On the one hand, the Panathenaic frieze was no new invention; on the other, as the gods received the procession on the frieze, so must they have done on the columns of Ephesus. Both were

birthday festivals. There are several echoes of the Parthenon frieze at Ephesus. For instance, one of the waiting citizens throws up his hand

FIG. 4.

(fig. 4) in the well-known gesture of figures on the frieze. The Ephesus group in turn reflects light on the "magistrates" of the Parthenon, who must have been representative citizens. We have seen that there was a sacrificial procession on the columns of the Cræsus temple, and from this we may argue back to several fragments of a processional frieze of archaic work found on the Acropolis, and see in it a prototype of the Parthenon frieze, as has been suggested by a German scholar—possibly, however, it was a dado band, rather than a frieze proper.

The drum with festoons, mentioned above, gives the earliest known appearance of such garlands. (There were festoons, too, at the Ara Pacis.) It has recently been partially restored at the Museum, but it has not been noticed that a tiny area of the top bed of the drum remains, and so it has not been set quite level. This patch of surface is valuable as settling the position of the festoons. Some of these sculptured drums were made up of two courses; besides the upper course of one such drum, there is a fragment which seems to have a bed joint running across drapery.

The Hermes Drum, the most perfect of the fragments, and an extraordinarily beautiful sculpture, has for subject, Alkestis redeemed from Hades by Herakles. Fig. 5 is from an illustration given in *The Builder*, when it had first been unpacked (1872, p. 726). I now give in fig. 6 the scheme of eight figures as they were disposed *around* the column, 1 coming next to 8. The figures 3, 4, 5, are Death, Alkestis, Herm s. Figs. 6. 7, 8, are Persephone, Hades (the last to be conquered are "Death and Hades") and Hekate (?). 1 and 2 were doubtless Herakles and the Janitor of the region below; enough of 2 remains to suggest that he was in a "conversation" attitude, and just enough of the drapery may be traced to show that he must have resembled some of the figures of the Parthenon frieze. (For instance, the fifth figures on the left and right of the god group of the eastern pediment). When I wrote before I suggested following the hint of a vase painting, the possibility that the most beautiful figure of Alkestis may have been inspired by a figure of Aphrodite by Pheidias on a metope of the Parthenon. A close examination of a photograph of this metope, which is badly decayed, has since convinced me that this was the case. To have a type by Pheidias thus restored to us is no little thing. Notice how the composition breaks up into groups—the inquiry: the departure: those left. Persephone in the last group holds a fillet or girdle in her hands. This is, I think, intended to suggest the mourning custom of placing such fillets at tombs. Persephone will mourn for one dying to the lower world and removed to earth again. Death himself makes a gesture of submission as Alkestis adjusts her mantle to go away. The beautiful figure of Hermes has been called Polycleitan in style, but the type was probably originated by Polygnotos; a similar figure appears on a white ground vase at the British Museum (Walters' "Greek Art," xxvii). The type of Alkestis adjusting her mantle is also found on vases. (There is in the British Museum a fragment of the Parthenon figure which, I think, was the direct prototype No. 342, 14.)

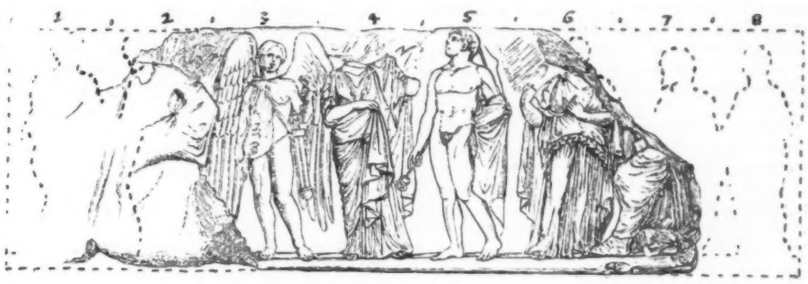


FIG. 6. Adapted from *J.H.S.*, 1913.

In the wall case at the Museum is shown a fragment of cymation decorated with a lotus and palmette pattern, of which I offered a restoration in J.H.S. I think it may have been the cymation over the great door. In the basement of the Museum, I drew some years ago another piece of a similar kind, which was, I believe, amongst the Ephesus fragments

From *The Builder*, 1872.

FIG. 5.

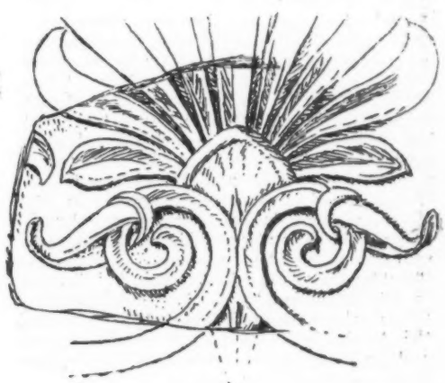


FIG. 7.

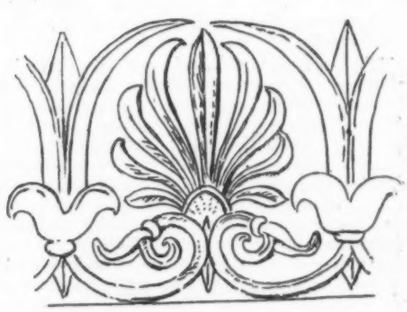


FIG. 8.

(Figs. 7–8). When compared with the perfect cymation of the Mausoleum, we obtain an interesting series of lotus and palmette patterns

of mid-fourth century work. These are in a direct line of evolution from the lotus band around the columns of Naucratis I (c. 575); the lotus and palmette soffite from Naucratis II (c. 530) and the anta moulding from Ephesus (c. 500), before illustrated. We then find examples of the fifth century from the Erechtheum and Bassae. Other examples at the British Museum of the fourth century are the necking band of the Ionic column from Halicarnassus. (Temple of Mars ?) and mouldings of the pediment and the lacunaria of the temple at Priene. Then on the great cymation from Ephesus, and the similar member from Priene we have a transformation whereby the ornament springs laterally from the lions' heads. Comparison will show that this was a development of the old motive conditioned by the recurring vertical joints midway between the lions' heads. The Mausoleum furnishes an intermediate link where the joint has been considered, although the pattern is still upright. This is but one example of the wealth of architectural details in the museum.

BOOKS.

Industrial Administration (a Series of Lectures) By Messrs. Berriman, Heath, Hill, Johnston, Kent, Legge, Pear and Rowntree. London: Longmans, Green & Co. Price, 7s. 6d. net.

This volume of 195 pages by well-known experts on different phases of administration is full of interest, and brings home to the reader the great need for improved methods in most of our industrial undertakings. Mr. Seebohm Rowntree deals with the social obligations of industry to labour and gives detailed figures, showing what is necessary in wages and how efficiency is increased by adequate provision for the workers. Professor Pear tells us of the application of psychology to industry; there are people who still smile at this new science, but the author makes out an excellent case for its application to the selection of individuals for work and improvements in working conditions. Mr. Berriman has much to say on education as a function of management, and gives a diagram showing educational progress; while Dr. Legge shows how occupational diseases can be reduced and combated. One of the most trenchant and interesting sections is that by Dr. Leonard Hill on atmospheric conditions, in which he discredits the theory of organic matter in the air as the result of respiration, makes a strong plea for efficient ventilation and light, and gives some illuminating results on the proper temperature for different workers and the evaporative power of air at different speeds, as estimated by a new thermometer he has designed; this should be read by any works manager who doubts the value of adequate ventilation. Chapters on "Industrial Councils," "Training for Administration," and "Industrial Fatigue," by the other authors, follow. We have reached the threshold of a new era in factory control, and we commend the perusal of this volume to the captains of industry.

"*All About Anthracite: the World's Premier Coal.*" By A. Leonard Summers. London: Technical Publishing Co., Ltd,. Price 7s. 6d. net.

This book should largely overcome the ill-informed but strong prejudice existing with the general public, and even with many persons of good knowledge, that anthracite cannot be used satisfactorily or economically for domestic purposes. Owing to its cleanliness and its hygienic and economical conditions, it is of importance that all those concerned in the design of buildings, especially dwelling houses, should carefully study the best methods of utilising a material the use of which would do much to improve the present conditions of our cities and towns. The author has clearly shown how to obtain the best practical results from this fuel, and gives carefully prepared tables showing comparative cost results between bituminous and authracite coal which demonstrate the superiority of the latter material for heating purposes.

NATIONAL HOUSING AND TOWN-PLANNING CONFERENCE AT BRIGHTON.

Perhaps one of the most beneficial activities of the National Housing and Town-Planning Council at the present time is the series of regional conferences which it has been holding during the last few months, the most recent of which took place at Brighton on July 26 and 27. The region concerned (Region "H") covers the Southern Home Counties, viz., Sussex, Kent, Surrey, Hampshire and the Isle of Wight. The purpose of the conference, which was attended by representatives of the various local authorities in the area, was "To consider what steps can best be taken to secure more rapid progress with the task of carrying into effect housing schemes throughout the area for which the conference is being called." In carrying out this programme almost the entire achievements, difficulties and aspirations arising out of the work in the Region were passed under review and discussed. The conference was presided over by Major C. P. Lovelock, joint Hon. Treasurer of the National Housing and Town-Planning Council, supported by Mr. H. R. Aldridge (Secretary), and Mr. C. H. Eyles, the Regional Commissioner.

During the first sitting Mr. Aldridge made some interesting statements concerning the Increase of Rent and Mortgage Interest (Restrictions) Act, 1920, and concerning the rentals of the houses erected under the Government housing scheme. In the first case he drew particular attention to Section 2 sub-section (2) of the Act, in which it is stated that the sanitary authority might apply to the county court, apart from any desire expressed on the part of the tenant, for an annulment of any increase of rent on the ground that "a house is not reasonably fit for human habitation." He urged that every local authority should exercise their powers under this sub-section, for, in the event of a closing order at any subsequent time, the local authority might be faced with a claim for compensation, since it would, by having allowed the increase to take place, have virtually admitted that the houses were fit for habitation.

Rents of New Houses.—With regard to the determination of rents for new houses, Mr. Aldridge stated that according to the financial regulation the authority to fix the rents was undoubtedly the local authority and not the Ministry of Health. Regard should be had, amongst other things, to "the conditions then prevailing and to the classes of tenant in the district for whom the houses were provided." After March 31, 1927, the rent to be charged should have regard to the cost of building and to the rate of interest, but he thought they should ignore 1927 at the present time.

During the discussions the chairman urged that although the Ministry of Health was not in a position to approve rents, it would be advisable whenever possible for a local authority to agree on the amount with the Ministry. It was suggested by a member that one day's wage out of six was a fair rent to charge. Some figures of actual rents now being charged were given: At Frimley Urban District the rents were 8s. 6d. for an "A" type house, and 13s. 6d. for a "B" type inclusive of rates; at Woking U.D., 10s. for an "A" type; at Westhampnett R.D., 10s. for an "A" type, 12s. 6d. for a "B" type, and 15s. for a "B4" type house, the local wages being in the last district only 42s. to 50s. per week. Yet in every case waiting tenants had accepted these figures.

Labour and Materials.—The meeting then considered the subject of labour and materials. Mr. Eyles stated that there was a very serious shortage of labour in the region, particularly of bricklayers, and to a somewhat less extent of carpenters and plasterers. Despite every effort on the part of certain authorities to obtain labour in sufficient quantity their schemes were being seriously hampered on this account. At Brighton 90 skilled labourers were wanted for housing schemes, at Guildford 60, at Bexhill 25, &c. He stated, however, that the Ministry of Health and the Ministry of Labour were giving serious attention to the matter, and that they held out hopes of obtaining an agreement with the building trade unions for the admission of a larger percentage of apprentices to the building trade and for a shorter term of training. This, he thought, would result in obtaining more men for housing schemes. In return for certain concessions on the lines indicated, the Government will offer substantial advantages, including a guarantee of five years' employment, and a weekly minimum wage irrespective of weather conditions. The total shortage in the region on July 10 was 460 skilled workers.

In dealing with the question of materials, the Commissioner stated that the shortage was not so general as is the case with labour. The chief deficiences are of bricks, tiles, cement, and light castings. He showed how one authority had overcome its difficulty by purchasing, with the approval of the Ministry, a local brickfield which had been unable to deliver bricks in sufficient quantities. He thought also that the situation might be eased by the use of approved special systems of construction, many of which could largely be erected with unskilled labour. With regard to cement, he suggested that architects to local authorities should consider how far they could safely use lime in lieu of cement. The lime burners in the region would increase their output to meet an increased demand. Passing on to the powers of local authorities under the Housing (Additional Powers) Act of 1919 to control the erection of works of less public importance than housing, he stated that authorities should seriously consider whether they were making sufficient use of these powers.

When the meeting was resumed on the second day, the subject of labour still occupied the attention of the delegates. One delegate insisted that the 44-hour week, which, he said, had emanated from the factory, must be abandoned. Another member said that better wages should be paid in order to attract more men into the industry; the shortage of houses was due to an endeavour to get the houses built too cheaply. Mr. Aldridge was also of the opinion that if better wages were paid the difficulties arising through a labour shortage might be overcome.

Local Authorities and Housing Schemes'—Mr. Eyles then proceeded to read an interesting paper to the delegates. He compared the position of local authorities now and before the Act was passed in 1919. In the autumn of last year the local authorities in the region on their forms of survey gave the regional need as about 38,000 houses. Of these plans have already been passed for 14,300 and contracts let for 6,320, of which about 2,000 houses were actually in course of erection, and land had been acquired sufficient to accommodate 28,535 houses. Points to be observed in the selection of sites was the question next dealt with, and the desirability, in view of the present high cost of road construction, was emphasised of obtaining sites with good frontages to existing roads, and with services already laid. When dealing with lay-out plans, it was pointed out that any relaxation of by-laws under section 24 (2) of the Housing, Town-Planning, etc., Act, 1919, would only apply when the proposals of private individuals were precisely similar to those of the local authority to which the Ministry of Health had given its approval. The question of amenities, such as the provision of large open spaces and recreation grounds, was mentioned, and it was shown that where these would be enjoyed by the inhabitants of a district at large, they could not be made a charge upon the housing scheme. The growth of the coal industry in parts of Kent was alluded to, and the particular problem which arose out of the delivery of coal. An interesting experiment which is being made by the Chislet Colliery Co. in their new mining village at

Sturry, near Canterbury, was discussed; here the whole order of things is reversed by the subsidiary roads giving access to the backs instead of the fronts of the houses.

The commissioner next dealt with the question of finance. Referring to the success of the local housing bond campaign in the district, he stated that £73,500 had been raised up to June 2 by the County Borough of Brighton, while Hove Borough had raised £35,000, and Worthing Borough, £29,000. He advised those local authorities which had experienced difficulties in raising money to forward to the Ministry a full statement of the conditions which they had encountered, and the steps they had taken to obtain it.

Mr. Aldridge, when speaking on the question of finance, pointed out that after October 1 it was proposed that local authorities selling National Saving Certificates locally would have 50 per cent. of this amount credited to them as equivalent to Housing Bond issue. Rural Councils, unless the prospects of making a success of a local bond campaign were good, should at once seek a loan from the Public Works Loan Commissioners. This country's housing programme was going through, Mr. Aldridge said, and it was attracting world-wide admiration. If the local authority could not find the money, it had the Government behind it; the Government was dead earnest in the matter of finance, and had set aside £70,000,000 for the use of local authorities whose rateable value was under the figure of £200,000.

An interesting point was then discussed of the case of a local authority whose local bond campaign, although bringing in a flow of money, was not bringing it in sufficiently quickly to meet the immediate demands, and was thus delaying the schemes. It was suggested that in such a case, although it could not be said that the campaign was a failure, the assistance of the Public Works Loan Board might be forthcoming to assist the authority to the extent of its immediate requirement. A resolution was framed on these lines and carried unanimously.

PARLOUR AND NON-PARLOUR TYPES.—The question of parlour and non-parlour houses was dealt with. Most delegates were in favour of only having the parlour type, and considered non-parlour houses obsolete and retrogressive. A resolution was proposed urging the Government to commandeer large mansions in order to convert them into working-class dwellings. This resolution was not carried, and the conference concluded with a vote of thanks to the chairman and to the Commissioner.

An Exhibition of Drawings and Models.

In connection with the Conference an exhibition of drawings, photographs and models, showing some of the work which is being carried out or which is completed in various parts of the region, was arranged by the regional office.

A criticism that has from time to time been raised against the housing schemes which are being carried out by local authorities under the Housing, Town-Planning, etc., Act, 1919, is that they tend to supplant one form of monotony by another, but those who visited the exhibition at the Brighton Town Hall probably realised that any anxiety on that account is more or less groundless. In the matter of lay-outs it is only necessary to compare those of two large coast towns—Dover and Folkestone—in order to appreciate the extent of the difference in treatment. Both sites are delightfully situated on the edge of the downs; the one, on a steep southern slope, is developed with narrow roads with single frontages, access being obtained to the backs only of the lower houses from the road, the fronts being reached by foot-paths, while the Folkestone lay-out, which we illustrated in our issue of June 4, is treated with wider roads on more formal and symmetrical lines. An interesting plan is that by Mr. Harding Thompson, which recently won the competition for the lay-out of the Post Barn area for the Chatham corporation. Many of these plans afford an excellent opportunity for comparing the old methods with the new, for in many cases the adjoining streets are shown with their long rows of narrow-fronted back-projecting houses.

In the houses, too, the variety is noticeable, ranging from a formal treatment, as in the houses for Hove Borough—shown both by drawings and eighth and quarter-scale models—to a traditionally rural treatment as at Malling or at Westbourne, where the walls are built of chalk and flint. To the sceptical, perhaps the most successful exhibits of the exhibition were the numerous photographs of houses in various states of progress from excavations, as at Folkestone, to smiling tenants in the front garden, as at Bognor.

A Gallipoli Memorial.

A sub-committee of the Gallipoli War Memorial Committee has considered designs and sites for a proposed memorial at Gallipoli, and in its report it is recommended that the memorial should be placed at Cape Tekke Burnu, at the south-west extremity of the Peninsula. The proposal for a tower was not adopted owing to the difficulty of obtaining good building stone locally, and a design by Captain Douglas, R.N., for an obelisk 67 ft. high, constructed of white marble, which could be procured from the islands in the vicinity, was recommended as the most suitable. The Committee has decided to defer an appeal for funds pending the decision of the Government regarding the erection of a memorial at the expense of the State as part of the general scheme now under consideration.

A Converted Army Hut at Bognor.

A CONVERTED ARMY HUT AT BOGNOR.

THE Urban District Council of Bognor is to be congratulated on having produced what in these days of high prices may be considered to be a most unusual result. It has almost completed seven cottages at the surprisingly low cost of £450 each, including land. The usual method of converting an Army hut will be familiar to most readers, and it consists chiefly of the erection of partitions and of the installation of fireplaces, a range, and various sanitary fittings, the whole producing a bungalow type of dwelling which, at the best, can only be regarded as an emergency home, the life of which is strictly limited. The procedure at Bognor, however, has been on totally different lines.

The original intention of the Council in purchasing a Harrod sectional Army stores hut, measuring 108 ft. by 20 ft. 10 in., was to convert it into two or three dwellings of the kind above described, but in the course of preparing plans for the conversion it was realised that the height of the hut, 13 ft. 10 in., was likely to result in rooms that would be both difficult and costly to heat and ventilate, and that would be neither comfortable nor cheerful. It then occurred to Mr. Oswald A. Bridges, the Council's Surveyor, that a far better result might be achieved by means of a slight additional expenditure in constructing a second floor. This would then produce seven cottages, each above the Ministry of Health's standard in accommodation for a non-parlour house, having a living-room, scullery, bath, coal, larder, and w.c. on the ground floor, with three bedrooms above.

Almost all the structural alterations were carried out by means of concrete. The sections of the hut were raised on a concrete hollow wall 5 ft. high, and each house is separated by a party wall 6 in. thick of clinker concrete mixed 6 to 1. All the clinker was obtained from the Council's refuse destructor. The walls are built of blocks 18 in. by 12 in., which were mixed on the wet system in wooden frames, the wet system being considered, despite the fact that it is not quite as expeditious as the dry, to produce better results. The outside of the hut, which consisted of weather-boarding, was counter-lathed and lathed and then coated with cement stucco and treated with pebble-dash. The roof was boarded, felted and covered with fibro-cement slates. As the front of the building is exposed to the prevalent south-west gales, new sash windows were installed.

A particularly interesting point was the rapidity with which the work proceeded. The trade unions having, it would appear, fortunately fixed no limit of output on the number of blocks which a man may lay, the walls rise far more rapidly than in the case of brickwork. From the experience gained from this experiment, however, Mr. Bridges is of the opinion that the size of the blocks used (12 in. by 18 in.) is too large, producing a block which weighs 84 lb., and which is too heavy for a man to handle comfortably.

The whole of the work, which has been carried out almost throughout with waste material, the chief items being a disused Army hut and refuse destructor clinker, has been done departmentally under the supervision of the Council's Engineer. The illustration shows what a transformation has taken place, and few would recognise an Army hut in the elevations of these cottages. It is understood that the scheme was carried through in the face of no little official opposition, the whole idea being somewhat novel and without precedent. The result, however, would appear to justify the persistency with which the Council pursued its aim.

A Memorial to Lord Rayleigh.

It has been decided to erect a memorial to the late Lord Rayleigh, in the form of a mural tablet in Westminster Abbey, and the execution of the tablet has been entrusted to Mr. Derwent Wood.

THE ROYAL SANITARY INSTITUTE.

ANNUAL CONGRESS.—III.

WE give below abstracts of the papers and discussions at the second day's meeting of the Section of Engineering and Architecture at the Annual Congress of the Royal Sanitary Institute, held at Birmingham on July 19–23. A report of the first day's proceedings was given in our last issue.

Domestic Drainage.

MR. J. STUART KING, A.M.Inst.C.E. (District Surveyor, Birmingham), in a paper entitled "Notes on Domestic Drainage," said the present state of the law made it difficult for many local authorities to permit two or more houses to be drained by one drain. Various authorities, including Birmingham, had obtained powers for combined drainage, and with present-day prices the saving was greater than ever. A properly-laid combined drain should work more efficiently than a drain from one small house, and the initial outlay was much smaller. Interceptors were still necessary in most towns and served useful purposes, but one interceptor on a combined drain should be sufficient for the whole block of houses.

With present-day prices and the necessity for keeping down the cost of houses, no manholes should be constructed unless they served a useful purpose, otherwise it was insurance against an accident that might never arise. Manholes sometimes aggravated nuisances, owing to their ability to store sewage. There had been great improvements in drainage work in the last twenty or thirty years, but, like all work that was hidden, there was a danger of scamping if inexperienced men were employed without good supervision; all drains should be tested with water when laid and again at the completion of the house. A district that required good drains for new houses soon acquired a satisfactory reputation. A good drain would last longer than the house, but a badly-laid one would cause trouble sooner or later. It was necessary to provide drains sufficiently deep to drain the lowest floor of a building, and cellars should not be constructed where they could not be efficiently drained.

The requirements of the usual building by-laws were on the right lines, and, if intelligently followed, would lead to good work. In some cases amplification in small details would be an advantage, and such points as the weights and method of jointing soil and vent pipes, and the provision of rust boxes at the foot of vent pipes might be inserted. A vent pipe that would not carry sewage without a rust box at the foot rapidly became useless.

It was to be regretted that many water authorities did not sanction 3-gallon flushing cisterns, as the additional gallon was a great help in flushing a small drain. Owners of houses should keep an accurate plan of their house drains, and these should be transferred with the deeds when the houses were sold. If owners would have their drains superficially examined and well flushed at regular periods they should have very little trouble with them.

In Birmingham the new estates were all being drained by a system of combined drainage, by which method the number of openings in the road were less, and only one interceptor and one vent pipe were required to drain twelve or fifteen houses. The number of manholes had been in excess of the number actually required in the past. To surround and embed drains in concrete was very costly at present, and the speaker did not think it should be insisted upon. In many cases 4 or 6-inch pipes, well laid, and with soil well packed around them, would be quite satisfactory without concrete.

DISCUSSION.

MR. H. D. SEARLES-WOOD, F.R.I.B.A., agreed that plans showing the position of the drains should be handed over when a house was sold. In his experience, the plans of new buildings were never corrected after the execution of the work, and it was most important that before the drains were covered up the deposited plans should be compared with the work as executed and all variations carefully marked. These plans should then be placed on record, as the plans in the possession of the owner were rarely preserved.

MR. GREEN (Birmingham) said in his opinion a two-gallon flushing tank was too small, and a three-gallon tank would not waste so much water, as it would only be necessary to operate it once. A larger flushing pipe than that in general use now would result in a better flush—1¼ in. would, he thought, be the best diameter.

MR. PARKER (Hereford) said it was better to have a combined drain connecting not more than ten houses. This system was in use at Hereford, and had caused no trouble at all. A 4 in. pipe with a gradient of 1 in 20 or 30 was sufficient to drain four houses and to keep the drain self-cleansing. Nine-inch pipes were objectionable, because they very readily collected the deposit instead of carrying it away. For eight or ten houses a 6 in. pipe was most suitable.

MR. MILLER (Chairman, Liverpool Sanitary Committee) said he would like to see it made compulsory that plans showing the position of the drains should be deposited with the title deeds. In the testing of drains, he was strongly in favour of the smoke test as against the water test. He believed in the provision of a large number of manholes, but their use could, of course, be overdone. With regard to the drainage of cellars, he mentioned that when the basement of a large shop in Liverpool was being constructed a short time ago a pool of water (evidently part of the old Liver Pool) was discovered. This was below the level of the sewer in the street, and a small pump was installed and was being kept at work to raise the water to the sewer level, with satisfactory results.

In reply to the discussion, MR. STUART KING said that the Act provided that the upkeep of combined drains rested with the owners, but the local authority could serve notices and require work to be done in the same way as in the case of ordinary one-house drains. He agreed that two-gallon flushing cisterns wasted water, and expressed the opinion that flushing pipes should be at least 1¼ in. or 1½ in. in diameter. Also, the cistern should be fixed as high as possible. If a 6 in. drain were used for 10 or 12 houses, a gradient of 1 in 40 would be ample to keep it clear. For the ventilation of drains in Birmingham it was required that a fresh-air inlet be provided near the interceptor and the vent pipe. He thought the smoke test a very valuable test. A large number of manholes were good if they could be afforded, but at the present time every economy was necessary and they should be dispensed with wherever possible. Manholes were often the cause of trouble in that the water leaked through as the result of a stoppage and they became cesspools.

Factory Building.

In the course of a paper on "Some Essentials in Factory Building," Mr. HERBERT T. BUCKLAND, F.R.I.B.A., said that diverse as the requirements of special manufactures might be in regard to their main purpose, one important consideration should be common to them all—*i.e.*, adequate provision for the welfare of the worker.

The first question would be the selection of a site. The location of this should be governed to some extent by the labour available in the district, and it followed almost without saying that a spot should be chosen either where there was a large working population close at hand or in such a position that the workpeople could conveniently be conveyed to the works. Convenient access by rail was essential for the supply of raw materials and the despatch of the finished products. The proximity of a canal was also very desirable. All large works would require their own railway sidings and many of them a canal arm. It would usually be found there was a tendency to under-estimate the length of railway sidings required. Trucks, whether empty or full, occupied an equal amount of line; any hitch in loading or unloading was likely to cause a congestion, and consequent friction with the railway company if sufficient facilities were not provided. If a canal arm was required it would be well to consider the position of it at an early stage, as it was likely to require a good deal of room, and needed careful planning so that it might not interfere with the proper development of the site. Any inquiries for a site must be accompanied by investigations as to the water, gas, electricity, sewers and other services available—points too often neglected. Considerations with regard to the type of plan to be adopted largely affected the area of the site required, and this, in its turn, depended upon the sites available in the district in which it was proposed to build, if, for special reasons, such as the labour supply or the proximity of a supply of coal or raw material, some special district was decided upon. This naturally raised the general question of whether it was better—assuming no other considerations to be of paramount importance—to build upon one or more floors. The majority of the factory buildings put up during the last four years had been of one story only, and there was a concensus of opinion among manufacturers that this was the most convenient type of plan. The resaons were not far to seek; the labour in moving raw material and the products in course of manufacture was reduced to a minimum, supervision was made easy, and the problem of lighting was simplified.

Owing to the shortage of steel during the period of the war, it became essential to resort to a type of roofing which dispensed with the necessity for its use, and at the same time did not make too great a demand upon the timber supply; the result was that the "Belfast" type of roof was almost generally adopted. It had many disadvantages. The trusses had to be fairly close together and slightly restricted the daylight, and although counter-shafting could be suspended from it, it was not suitable for carrying a main driving shaft. Before the war the roof known as "saw tooth" was almost invariably adopted for one-story factories and the north light was regarded as a *sine qua non*; with the "Belfast" roof an ordinary top light became essential. The "saw" type of roof with the lights facing north was the most suitable of all roofs and particularly lent itself to easy and rapid construction. The principals could be made of steel, reinforced concrete, or wood. The gutters could be made of cast-iron, and in that case pockets could be cast on the sides of the gutters to take and support the wood principals, which made it a very satisfactory and a fairly cheap job. If buildings were required for cranes, the building would have to be as follows:—Gantry 20 to 25 ft. high and the eaves of the building 8 to 10 ft. higher, making in all 30 to 35 ft. For such a building a span roof was very suitable, and the sun did not have the same effect when the roof was so high as when the eaves were only 12 to 14 ft. high; in fact, a shop of the latter height should never be built in such a way that the sun could shine through the roof, but that did not apply when the roof was 30 to 35 ft. high. It was a curious anomaly that it should be generally agreed that sunshine was essential in a house whereas a very large body of opinion regarded it as a nuisance in a factory.

With the large roof area in a one-story factory of any size the question of the disposal of storm water was one which needed more careful consideration than was usually given to it; in a heavy storm the volume of water to be dealt with was considerable, and the size of the drains provided needed to be calculated carefully, especially as it was improbable that any great fall would be obtainable owing to the long lengths of drain and the level of the site, which obviously should be as flat as possible. A return to normal conditions would doubtless result in a return to former methods of construction, and although the "Belfast" roof had stood us in good stead during the past few years, the speaker hardly thought it was likely to be largely adopted when other forms of roof could be employed in which materials of a more durable description than

felt and materials of a similar character could be used for an external covering.

With regard to the development of the plan, it almost went without saying that the raw material should enter at one end of the factory and the finished product emerge from the other. The raw material would need to be stored, and that would involve the provision of a warehouse, which would naturally be placed against the railway sidings, and as the finished articles would be despatched by rail it would probably be convenient to combine the two warehouses, one for raw material and the other for finished goods, in one building. The next problem would be the transport from the sidings or the warehouse to the building in which the first process was to be performed. This would probably be done by trolleys on a track, a number of trolleys being pulled by an electric trolley. Before commencing to plan a factory it was essential to study in an existing factory the process of manufacture, and take particulars of the sizes of the machines and the areas which would be required around them for convenient working, and the relation of the different processes to each other. Having made a machine-setting-out plan, it would then be possible to arrive at sizes and widths of bays, and proceed to a solution of the problem so far as the manufacture was concerned; examination, sorting and packing would follow, and accommodation for them would need consideration. From the packing room the parcels of finished goods would be conveyed by trolleys to the finished warehouse ready for despatch by rail.

The next problem would be the workers, and it was necessary to deal with their movements as carefully as with the raw material. The first point which presented itself was getting the worker in and out, and at the same time providing some record of his coming and going. The old check system, in which each worker was provided with a metal check which he took from its place on a board when he entered the works and replaced when leaving, had been almost entirely superseded in large works by a system of clock registers. The consideration of cloakroom accommodation was very important where women workers were employed. It was desirable that lockers with solid sides and expanded metal doors should be provided for each person so that the clothes did not hang against each other. There should be ample accommodation for changing clothes and boots, and for the drying of wet clothes. Good ventilation was essential, and means should be adopted to prevent pilfering or theft. Adequate lavatory and other sanitary accommodation should be grouped with the cloak rooms, in a separate apartment if possible, and all under the supervision of a special attendant. The time occupied in taking off cloaks and hats, and probably changing boots, might be considerable, and if this took place during the employer's time the loss to him would represent an appreciable sum of money each day. This could be avoided if the workpeople passed the clocks after leaving the cloakrooms.

Having got the workers into the building, it remained to consider what were the essentials in factory construction which would best contribute to their health and welfare and, as a direct result, to their efficiency as workers. Whether natural or artificial, the lighting of the factory should be adequate and as constant as possible. Roof lighting was generally considered preferable to lateral lighting, and a north light was thought to be the best. Where lateral lighting was necessary, the question of the height of rooms in relation to their width was an important one. Pulleys and belting were greatly obstructive to light. Light-coloured walls and white ceilings added much to the general brightness of a shop. Dirty windows or roof lights caused a great loss of daylight, and it was important to give facilities for easy cleaning from within as well as from without. Whether gas or electricity was used for lighting, common to the use of both was the importance of constancy and uniformity of illumination over the necessary area of work, and the arrangement of the lights so that the direct rays did not fall on the eyes of the workers or cast shadows on the work.

In ventilating the factory, clean air as well as a stimulating atmosphere should be the aim in view, the essential requirements being freshness and movement. Cool air was more stimulating than warm, and dry air was preferable to damp. The proportions of carbonic acid in the air of a room were no longer regarded as the infallible test of the ventilation as they were about ten years ago, and movement was now regarded as the chief essential. In the matter of ventilation the factory had passed through the same experience as school building, and the same conclusions had been arrived at, viz., that a natural system was likely to prove the most efficient. However, like all other systems, it was necessary that it should really be in action, and that was only obtained when windows and other openings intended for the inlet or outlet of air were open.

Cleanliness in the factory was essential not only for health but because of its bearing upon the self-respect of the worker, and it was desirable that floors should be of such a character that they could be washed down when necessary. They should thus be made of some smooth, hard, durable and impervious material as required under the Factory Act. A floor of that character, however, was not the most suitable for workers to stand upon, and consequently footboards for workers at machines should be provided.

In the provision of lavatories there were one or two important details which should be borne in mind. Sufficient provision must be made for draining the floor, which should be smooth, hard, and impervious, and properly graded and sloped. Any walls against which basins were placed should be faced with impervious and easily-cleaned material. The sanitary fittings should be very strong and durable and free from loose parts, such as plugs and chains, and be adequately secured either to the walls or stands and have a good supply of hot and cold water. Waste pipes of a sufficient size were essential, and fewer stoppages were likely to occur if they discharged on to open floor channels at frequent intervals and avoided long runs of horizontal pipe. Washing troughs were regarded as preferable to separate basins.

In the consideration of the canteen, the Health of Munition Workers Committee had issued a useful pamphlet, which stated that the best position for a canteen would be on the boundary of the works, so that it could be entered from within or from without the factory. The building should include a dining-room, kitchen, scullery, larder stores, catering office and sanitary accommodation. The stores should open upon a yard, with easy access for tradesmen's carts, &c. The system of service would be from a counter, therefore the kitchen and scullery should abut directly upon the dining-room. Eight and a-half square feet per person seated was suggested as the allowance in the dining-rooms. Separate dining-rooms for the two sexes were advocated, and it was suggested that they should be so designed that they could be thrown together to form a single hall for social or educational purposes.

No factory of any size could be regarded as well equipped unless it possessed a surgery with a trained nurse in charge. This should be specially designed for the purpose, and should comprise a surgery, restroom, store and nurses' room. In factories where both sexes are employed a second room was desirable.

DISCUSSION.

MR. HURST SEAGER (New Zealand), referring to Mr Buckland's statement that a site should be chosen where there was a large working population, said that these people would probably be already engaged in other occupations, and it did not follow that because there was a large population of manual workers that they would be suitable for the new industry to be set up. Also, if the site were near such a thickly populated area the workers would have to be transported to and from their work, thus adding to the congestion. It seemed to him that the workers should be accommodated apart from the factories, but quite near. The position was also affected by the cost of transporting raw material and of getting the finished articles away, and in this connection various factors had to be taken into account. In New Zealand, for instance, there were smelting works situated hundreds of miles from the ore, but they were near the coal-fields and it was found to be cheaper to carry the ore to the coal than the coal to the ore. In the case of the freezing works, these were first placed on the sheep farms, but it had now been found that it was cheaper to transport the live sheep to the ports, where they are killed and frozen. The garden-city idea was the best for factories, and if no more factories were erected in existing towns the congestion would gradually be reduced, and, in course of time, they might themselves become garden cities.

MR. MARKHAM (H.M. Office of Works) said that although the welfare of the workers had to be considered it had to be borne in mind that they did not go to the factory for the benefit of their health, and first and foremost a factory should be designed so as to manufacture goods in the best and most economical way possible. Otherwise the industry might not result in a commercial success and might have to shut down. If that were borne in mind, and the factory designed from the point of view of efficiency, consideration could afterwards be given to the health of the worker, and, if necessary, so as not to injure the health of the employees, some of the considerations from the point of view of the practical work of the factory might be dispensed with. With regard to lighting, a south light would ruin certain work and in some cases would be prejudicial to the eyes of the employees. For general purposes a diffused light such as came from the north was an advantage. In most factories one of the first essentials was an enormous area of floor space on one level. When a large amount of belting and shafting had to be provided it was impossible to light the shop from the sides, and top lighting had to be provided which precluded the erection of anything but a one-storied building. The question of one *versus* multi-story factories would have to be decided to meet the requirements of the particular industry for which the building was intended. The plenum system of ventilation, by which fresh air was pumped into the building, resulted in the air-pressure being above the normal, and that was bound to have a harmful effect on the workers. In systems where the air was pumped out of a building and fresh air allowed to find its way in, the opposite effect obtained, also with harmful results. Perhaps the most satisfactory method was a combination of the plenum and vacuum systems.

Replying to the discussion, MR. BUCKLAND said he agreed with Mr. Seager regarding placing new factories in situations where a plentiful supply of labour already existed; in preparing his paper he had in mind more particularly the case of munition factories during the war, which had to be erected in many cases where labour could be taken from other trades. He agreed that factory floors should be impervious so far as keeping them clean was concerned, but such floors were extremely tiring to stand upon; the difficulty could be solved by the provision of wooden gratings. In his experience, hard-wood floors, although expensive, were best in the end, and many factory owners insisted upon them. In a shop where a lot of grease got on the floor it did not really create dirt, but saturated thoroughly into the floor and was not insanitary. Factories should always be designed to fulfil their first requirements as factories, and if they did not they would be failures; they would also be failures if they did not provide for the welfare of the workers as far as possible. He was strongly in favour of factories on one floor only, but large buildings of this kind were very difficult to ventilate. The roof lights had to be opened, and if the openings in the walls were limited it was necessary that a strong current of air should enter the windows in order to carry across the building and out at the other side; if a method such as the

plenum system were not adopted there were no means of forcing the air across. In some factories belts and machinery were always running, and they had a considerable effect on the movement of the air. A great disadvantage of the plenum system of ventilation was the monotony of the atmosphere—the movement of air was not felt at all and there was no variation in temperature.

Next Year's Congress.

The next annual Congress and Exhibition of the Royal Sanitary Institute is to be held at Folkestone during July, 1921.

INCREASE OF RENT ACT: MORTGAGES.

IN our former articles on the Increase of Rent and Mortgage Interest (Restrictions) Act we have confined our observations to rent, but we now propose to refer to the provisions which relate to mortgages.

INCREASING INTEREST.—Section 1, so far as it relates to mortgages, reads: "Subject to the provisions of this Act, where the rate of interest on a mortgage to which this Act applies has been, since the 25th March, 1920, or is hereafter increased, then if the increased rate of interest exceeds by more than the amount permitted under this Act the standard rate of interest the amount of such excess shall, notwithstanding any agreement to the contrary, be irrecoverable from the mortgagor." Then follows a provision for cases where mortgage interest has been increased after the above date, but before the passing of the Act, allowing the mortgagee to cancel the increase.

MORTGAGES WITHIN THE ACT.—Reading the above section it will be seen the first thing to ascertain is, what is a mortgage to which this Act applies? The answer to this question is contained in section 12 subs. 4: "Subject to the provisions of this Act this Act shall apply to every mortgage where the mortgaged property consists of or comprises one or more dwelling-houses to which this Act applies or any interest therein, except that it shall not apply (*a*) to any mortgage comprising one or more dwelling-houses to which this Act applies and other land if the rateable value of such dwelling-houses is less than one-tenth of the value of the whole of the land comprised in the mortgage, or (*b*) to an equitable charge by deposit of title deeds or otherwise, or (*c*) to any mortgage which is created after the passing of this Act." The expression "mortgage" includes a land charge under the Land Transfer Acts 1875 and 1897 [see Section 12 (1) (*h*)].

STANDARD RATE OF INTEREST.—The next question is what is the "standard rate of interest"? and this is laid down in Section 12 subs. 1 (*b*). The expression "standard rate of interest" means in the case of a mortgage in force on August 3, 1914, the rate of interest payable at that date or in the case of a mortgage created since that date the original rate of interest.

PERMITTED INCREASE OF INTEREST.—The next point is to see what is the increased rate of interest "permitted by this Act." Section 4 deals with this: "The amount by which the increased rate of interest payable in respect of a mortgage to which this Act applies may exceed the standard rate shall be an amount not exceeding one per cent. per annum. Provided that (*a*) the rate shall not be increased so as to exceed six and a-half per cent. per annum, and (*b*) except in the case of a dwelling-house to which this Act applies but the enactments repealed by this Act did not apply, the increase during a period of one year after the passing of this Act shall not exceed one-half per cent. per annum." The reason for this last most obscure provision appears to be that when the duration and application of the principal Act was extended by the Act of April, 1919, an increase in mortgage interest not exceeding one-half per cent. was allowed in certain cases.

In what cases it was allowed it is somewhat difficult to say, for section 3 of the Act of April, 1919, provided for such an increase in the "extended period," and, as has been pointed out in connection with rent, that extended period appears never to have come into existence, as it was defined as the time between the date at which the principal Act would have expired (six months after the termination of the war) and Lady Day, 1921, the extended period fixed by the Act of April, 1919; but as the war has never been declared at an end and six months have to elapse after the official declaration of the termination of war, the principal Act has never expired. It is, therefore, uncertain whether section 3 of the Act of April, 1919, has ever come into operation. That section would have allowed an increase on *all* mortgages within the principal Act of one-half per cent., but, as it is, the only increase in mortgage interest which appears to have become effective under that Act is that allowed by Section 4 of the Act of April, 1919, in respect of mortgages *not* within the principal Act but only in the extended jurisdiction conferred by the Act of April, 1919. This being the case, the position seems to have been that until the present Act mortgagees had no power to increase mortgage interest where the mortgage was on property defined by the principal Act, *i.e.*, on houses where either the annual amount of the standard rent or the rateable value did not exceed in the Metropolitan Police District £35, in Scotland £30, and elsewhere £26; but when the jurisdiction was extended by the Act of April, 1919, under section 4 of that Act one-half per cent. increase was allowed in the extended jurisdiction on mortgages on houses where *both* the annual amount of the standard rent and the rateable value exceeded in the Metropolitan area £35 but not £70, in Scotland £30 but not £60, and elsewhere £26 but not £52.

The present Act, in defining the limits of its scope, has reverted to the expression used in the principal Act: "where *either* the annual amount of the standard rent or the rateable value" does not exceed in the Metropolitan area £105, in Scotland £90, and elsewhere £78; and by section 4, as shown above, the permitted increase of one per cent. with a maximum of six and a half per cent. only applies in the case of houses brought within the Act by this latest extension. If we are correct in our reading of the older Acts and the new Act as set forth above, it would appear that the new Act does not carry out the recommendations of the Committee on Rent Increase, which, in its Report, contemplated that mortgage interest would have been increased on *all* mortgages under the old Acts by virtue of the Act of April, 1919, and the legislature seems to have acted on the same assumption in deferring the whole increase of one per cent. in the case of all mortgages under the older Acts for a year, and in only allowing one-half per cent. during that period, but, as shown above, it is doubtful if any increase has ever been allowed in the case of houses only under the principal Act, This is an extremely important point, and the legislation is so complicated that we venture an opinion upon it with great hesitation; but if our reading of the Acts is correct it certainly appears that on mortgages within the principal Act no increase has hitherto been permitted and, therefore, only one-half per cent. increase in interest is allowed for a period of one year from the passing of the present Act (July 2, 1920).

LIMITATION ON INCREASE OF INTEREST.—Section 3 provides that "nothing in this Act shall be taken to authorise any increase in the rate of interest on a mortgage except in respect of a period during which, but for this Act, the security could be enforced." Subs. (2) of this section makes a notice a condition precedent before increased rent is due or recoverable, but we find no provision in the Act making a notice necessary before mortgage interest is raised.

RESTRICTIONS ON CALLING IN MORTGAGES.—Section 5, which contains the restrictions on obtaining orders for possession with which our readers are familiar, alternative accommodation, &c., is headed "Further Restrictions and Obligations on Landlords and Mortgagees." In the whole of the section mortgagees are not expressly referred to, but no doubt all the provisions it contains apply to mortgagees in possession. Section 7 also deals with restrictions on calling in mortgages. A mortgagee shall not take any steps for enforcing his security (*a*) so long as interest at the rate permitted by this Act is paid and is not more than 21 days in arrear, and (*b*) the covenants by the mortgagor (other than the covenant for the payment of the principal money secured) are observed, and (*c*) the mortgagor keeps the property in a proper state of repair and pays all interest and instalments of principal recoverable under any prior encumbrance, "provided that this provision shall not apply to a mortgage where the principal money secured thereby is repayable by means of periodical instalments extending over a term of not less than ten years from the creation of the mortgage, nor shall this provision affect any power of sale exercisable by a mortgagee who was on March 25, 1920, a mortgagee in possession or in cases where the mortgagor consents to the exercise by the mortgagee of the powers conferred by the mortgage." "If in the case of a mortgage of a leasehold interest the mortgagee satisfies the county court that his security is seriously diminishing in value or is otherwise in jeopardy, and that for that reason it is reasonable that the mortgage should be called in and enforced, the court may by order authorise him to call in and enforce the same, and thereupon this section shall not apply to such mortgage, but any such order may be made subject to a condition that it shall not take effect if the mortgagor within such time as the court directs pays to the mortgagee such portion of the principal sum secured as appears to the court to correspond to the diminution of the security."

APPORTIONMENT.—An extremely complicated provision has been added to the Act since the Bill was in Committee, dealing with apportionment. As we have shown, the Act, by section 12 subs. (4), excludes from its operation any mortgage comprising one or more dwelling-houses and other land if the rateable value of the houses is less than one-tenth of the rateable value of the whole of the land comprised in the mortgage. The new subs. (5) is as follows: "When a mortgage comprises one or more dwelling-houses to which this Act applies and other land, and the rateable value of such dwelling houses is more than one-tenth of the rateable value of the whole of the land comprised in the mortgage, the mortgagee may apportion the principal money secured by the mortgage between such dwelling-houses and such other land by giving one month's notice in writing to the mortgagor, such notice to state the particulars of such apportionment, and at the expiration of the said calendar month's notice this Act shall not apply to the mortgage so far as it relates to such other land, and for all purposes, including the mortgagor's right of redemption, the said mortgage shall operate as if it were a separate mortgage for the respective portions of the said principal money secured by the said dwelling-houses and such other land respectively to which such portions were apportioned. Provided that the mortgagor shall, before the expiration of the said calendar month's notice, be entitled to dispute the amounts so apportioned as aforesaid, and in default of agreement the matter shall be determined by a single arbitrator appointed by the President of the Surveyors' Institution." The effect of this subsection appears to be to enable the mortgagee to free "other land" which would be included in a mortgage within the Act, but it does not meet the point we drew attention to in a note in our issue for April 9 in connection with the case *re* Dunn's Application, where a mortgage includes not "other land" but several houses outside the limits of the Act but one house which is within the limit, in which case the whole mortgage is brought within the operation of the Act. In that case trustees desired to call in a mortgage in order to distribute the trust property amongst the beneficiaries,

but they were held not entitled to do so because one of the houses comprised in the mortgage was within the Acts. We have on more than one occasion drawn attention to the hardship involved in this decision, and we regret the matter was not remedied in this new Act.

IRRECOVERABLE SUMS.—It only remains to note section 14, which provides that where, whether before or after the passing of this Act, any sum has been paid on account of mortgage interest, which by virtue of this Act or any Act repealed by it is irrecoverable by the mortgagee, the sum so paid is made recoverable from the mortgagee by the mortgagor or it may be deducted from any interest payable to the mortgagee by the mortgagor.

We believe the above is a summary of all the principal provisions contained in the Act relating to mortgages. The problems involved are not quite so complicated as those relating to rent, but they are sufficiently abstruse and it will be a good thing for the owners of property, and not less so for tenants and mortgagors as a body, when this complicated and sectional legislation can be scrapped for ever.

The case of Nicholson *v.* Jackson, which we noted in our issue for May 28, has been carried to the Court of Appeal, where the decision of the Divisional Court has been reversed, Lord Justice Scrutton, however, dissenting from the majority of the Court. The point raised in the case was whether under the Increase of Rent Act, 1915, which allowed an increase of rent in respect of increased rates, the rate as levied could be added to the rent, or whether, where the landlord under the Poor Rate Assessment and Collection Act, 1869, in consideration of undertaking to pay the rates whether the premises are occupied or not, receives an abatement or allowance, only the actual amount paid by him in rates could be added to the rent. The rebate received because of this arrangement under the Poor Law Act is 25 per cent., and the Court of Appeal has held that the rent can only be increased by the actual amount paid and not by the nominal amount of the rates.

How will this decision affect landlords under the new Act? Section 1 subs. iv of the Act of 1915, on which the decision turned, is as follows: "Where the landlord pays the rates chargeable on, or which but for the enactments relating to compounding would be chargeable on, the occupier of any dwelling-house, an increase of the rent of the dwelling-house shall not be deemed to be an increase for the purpose of this Act if the amount of the increase does not exceed any increase in the amount for the time being payable by the landlord in respect of such rates over the corresponding amount paid in respect of the yearly, half-yearly or other period which included August 3, 1914." The Court of Appeal placed the above construction on the words "payable by the landlord," and the new Act contains the same expression. Section 2 par. (*b*) allows the rent to be increased by "an amount not exceeding any increase in the amount for the time being payable by the landlord in respect of rates over the corresponding amount paid in respect of the yearly, half-yearly or other period which included August 3, 1914." It therefore appears that the decision will apply equally under the new Act.

A New Garden City.

The first sod was recently cut in connection with the first houses on a new garden city site which is being developed by the Bedwellty Urban District Council. At present between 800 and 900 houses are to be erected, and the scheme is to be extended to an ultimate total of 3,000 houses. The work is being carried out on the Guild system.

A New Housing Region.

A new Housing Region has been set up for North Wales by the Ministry of Health. This Region embraces the counties of Anglesey, Carnarvon, Denbigh, Flint, Merioneth, and Montgomery. Mr. James Evans, of Imperial Hotel Buildings, Wrexham, has been appointed Housing Commissioner for this Region.

HOUSING AND TOWN-PLANNING NOTES.

Housing at Sunbury.

The ceremony of opening the first four houses of the Sunbury Urban District Council's housing scheme was recently performed by Sir Philip Pilditch, M.P. The scheme comprises 94 houses, of which 20 are now under construction. The four just completed are of the "non-parlour" type, but a number of parlour houses are also included in the scheme. The materials used are red brick up to first-floor level, with weather tiling above, and roofs of sand-faced red tiles. The external woodwork is painted white, and the internal woodwork is stained. Other features are the separate bathroom adjoining the scullery, hot-water supply to bath and sink from a gas-heated circulator, and ample cupboard accommodation. The architect is Mr. J. H. Norris, Lic. R.I.B.A., of Guildford and Godalming, and the contractors Messrs. Walter Jones & Sons. The average cost of the houses, after including for land, roads and sewers, fences, architect's fees, etc., will be £1,100 each, and the rents which have been approved by the Ministry of Health are 12s. 6d. and 10s. per week, for "parlour" and "non-parlour" houses respectively. An interesting statement was made by the contractor's representative regarding the number of bricks laid per day. From observations he had made on that contract—on which nearly all the employees were local men—he found that the bricklayers were laying just over 600 bricks per day each.

WEEKLY HOUSING RETURN.

New housing schemes submitted to the Ministry of Health during the week ended July 24 numbered 74, bringing the total to 10,795 (about 72,000 acres). Schemes approved now number 7,318 (about 52,000 acres). Fifty-eight lay-out schemes were submitted and 29 approved, bringing the total submitted to 5,399, and the number approved to 4,772. House plans representing 3,646 houses were submitted and plans for 3,361 approved. The total number of houses represented in all the plans now submitted is 239,565, and in the plans approved 225,634. Tenders were submitted for 2,570 houses. Tenders for 3,582 were approved, bringing the total number of houses in tenders submitted to 149,349 and in tenders approved to 132,050. Contracts have been signed for 79,094 houses.

The South Midlands Housing Region is, says the report, the most forward with the completion of houses, the number finished being 646, including 161 in Birmingham and 132 in Coventry. The North-Western Region, comprising Cheshire and Lancashire, follows with 597 houses, of which 257 are in Barrow-in-Furness and 100 in Liverpool. The number of houses completed in Yorkshire is 562, Sheffield being the leading local authority with 202 houses completed. In the remaining nine Regions, the numbers completed are as follows: Metropolitan Police District, 544; North Midlands, 331; Southern Counties, 240; Home Counties, 234; East Anglia, 139; Western Counties, 139; South Wales, 95; Northern Counties, 44; and North Wales, 40.

Applications.

Applications received from local authorities during the week include the following:—

SITES.

URBAN.—Birmingham, 51.23 acres; Failsworth, 29; Sutton-in-Ashfield, 18.

RURAL.—Kiveton Park, 12.3 acres. COUNTY COUNCIL.—Cambridgeshire, 14.

LAY-OUTS.

URBAN.—Barnard Castle, Birmingham, Carnforth, Christchurch, Darlington, Darwen, Diss, Ebbw Vale, Feltham, Penge, Portsmouth, Tottenham, Urmston, Windermere, Worcester.

RURAL.—Auckland, Beverley, Blaby, Bury, Chorley, Docking, Durham, E. Ashford, Guildford, Hartley Wintney, Hartshorne and Seals, Llanrwst, Maldon, Market Harborough, St. Dogmell's, Scarborough, Shardlow, Spilsby, Thingoe, Uffington.

HOUSE-PLANS.

URBAN.—Acton, 2 houses; Birmingham, 43; Bollington, 34; Bolton, 275; Bootle, 100; Chadderton, 172; Christchurch, 78; Darlington, 30; Diss, 8; Harrogate, 4; Ilfracombe, 40; Irlam, 271; Letchworth, 9; Littleborough, 133; Liverpool, 766; Manchester, 5; Mexborough, 140; Middleton, 114; Mossley, 50; Ogmore & Garw, 24; Oldbury, 16; Ormskirk, 10; Portsmouth, 28; Royston, 68; Scarborough, 23; Seaham Harbour, 50; Smethwick, 100; Southend-on-Sea, 145; Southport, 68; Tottenham, 28; Wood Green, 46; Yiewsley, 400.

RURAL.—Ampthill, 4 houses; Beverley, 4; Docking, 4; E. Ashford, 22; Glossop Dale, 40; Gower, 12; Guildford, 14; Hartley Wintney, 12; Helmsley, 8; Knaresborough, 18; Maldon, 9; Oxendon, 4; Plympton St. Mary, 22; Pontefract, 44; Sedgefield, 96; Thingoe, 6; Wetherby, 10; Wycombe, 12. COUNTY COUNCILS.—Lancashire, 14; Oxford, 7.

Approvals.

Approvals given during the week include:—

SITES.

URBAN.—Bedwas and Machen, 10.75 acres; Cramlington, 21.58; Exeter, 31.20; Newtown and Llanllwchairn, 10.40.

RURAL.—Blackwell, 10.87 acres; Chester-le-Street, 17.81; Kingswinford, 20.72.

LAY-OUTS.

URBAN.—Birmingham, Darlington, Darwen, Diss, Rickmansworth, Scarborough, Shoreditch, Urmston, Worcester.

RURAL.—Beverley, Blaby, Docking, Escrick, Hartshorne & Seals, Knaresborough, Maldon, Melbourn, Norman Cross, Staines, Tarvin, Thingoe, Uffington.

HOUSE-PLANS.

URBAN.—Acton, 2 houses; Birmingham, 45; Bollington, 34; Bolton, 275; Chadderton, 172; Darlington, 30; Dewsbury, 52; Diss, 8; Harpenden, 4; Harrogate, 4; Holme Cultram, 50; Ilfracombe, 40; Irlam, 271; Littleborough, 133; Liverpool, 766; Llandrindod Wells, 26; Manchester, 5; Mexborough, 240; Ogmore and Garw, 24; Oldbury, 16; Ormskirk, 10; Scarborough, 23; Seaham Harbour, 50; Smethwick, 100; Southend-on-Sea, 145; Southport, 68; Thame, 14; Weybridge, 166.

RURAL.—Ampthill, 6 houses; Aylesbury, 4; Beverley, 4; Docking, 4; Escrick, 6; Glossop Dale, 40; Gretton, 52; Helmsley, 8; Hemel Hempstead, 56; Knaresborough, 18; Maldon, 9; Melbourn, 4; Plympton St. Mary, 22; Pontardawe, 8; Pontefract, 44; Thingoe, 6; Wetherby, 10; Wokingham, 8.

Tenders.

Tenders approved during the week include the following:—

URBAN.—Bedlingtonshire, 102 houses; Beeston, 12; Birmingham, 45; Burgess-hill, 14; Carlisle, 26; Chadderton, 172; Charlton Kings 14; Chatteris, 22; Cowes, 40; Crook, 228; Darlington, 30; Ealing, 134; Eston, 4; Farnham, 28; Filey, 52; Gosport and Alverstoke, 64; Gravesend, 16; Gray's Thurrock, 94; Ketton, 12; Loughton, 33; Manchester, 5; Newton-in-Makerfield, 12; Ogmore and Garw, 24; Oldbury, 16; Plymouth, 48; Poole, 2; Prescot, 84; Rhymney, 60; Rochester, 20; Seaham Harbour, 50; Sevenoaks, 64; Sherborne, 12; Smethwick, 100; Wanstead, 48; W. Hartlepool, 51; Worsley, 20.

RURAL.—Bath, 8 houses; Bedford, 6; Berkhampstead, 20; Bradfield, 4; Chard, 4; Chelmsford, 16; Clutton, 8; Cookham, 20; Cranbrook, 46; Dorking, 46; Eastbourne, 14; Evesham, 98; Farnham, 32; Gloucester, 6; Helmsley, 8; Henley, 4; Newbury, 8; Newhaven, 4; Newmarket, 20; Northampton, 6; Plomesgate, 2; Plympton St. Mary, 22; Pontardawe, 8; Pontefract, 1,200; Potterspury, 6; Romsey, 8; Rugby, 34; Smallburgh, 6; Stow-on-the-Wold, 6; Tadcaster, 18; Tarvin, 8; Tavistock, 12; Thame, 4; Thornbury, 16; Uttoxeter, 6; Wallingford, 4; Winchcombe, 22; Wycombe, 10.

THE BUILDING TRADE.

NATIONAL FEDERATION OF BUILDING TRADES' EMPLOYERS.

Half-Yearly Meeting.

THE summer meeting of the National Federation of Building Trades' Employers of Great Britain and Ireland was held on Tuesday, Wednesday and Thursday of last week at Newcastle-on-Tyne. The Council met in private on Tuesday morning to consider the business to be brought before the half-yearly meeting on the following day. In the evening the members of Council were entertained to a banquet at the County Hotel by the Lord Mayor (Councillor Walter Lee, J.P.) and the members of the City Corporation. On Wednesday evening the delegates with their ladies attended a civic reception in the Laing Art Gallery, the guests being received by the Lord Mayor and the Lady Mayoress. Advantage was taken of the opportunity by the members of the Northern Counties Federation to make a presentation to Councillor S. Easten, O.B.E., J.P., the President of the National Federation. On Thursday the delegates and their ladies were the guests of the members of the local associations affiliated with the Northern Counties Federation. Some of the party travelled by boat and others by motor chars-a-bancs to Jesmond Dene, a few miles out of the city. On their arrival the guests were received by the President of the Northern Federation, Mr. Stanley Miller, and Mrs. Miller, and subsequently were entertained to luncheon.

The half-yearly meeting, which was held in the King's Hall of the Armstrong College, was presided over by Councillor Easten, and there was an attendance of about 140 delegates. The Lord Mayor of Newcastle, on behalf of the Corporation, welcomed the Federation to the city, and remarked that they were proud to know that Councillor Easten had been chosen its President for the current year. The President briefly thanked the Lord Mayor for his presence, and also for the hospitality which he and the Corporation had extended to the members of the Executive Council at the civic banquet.

MR. A. G. WHITE (Secretary) then submitted the half-yearly report of the Council. This touched upon various matters that had been dealt with during the past six months, including the 44-hour working week, a national agreement for the settlement of wages and conditions, the proposed National Building Code for the standard method of measurement, area arrangements *re* wages, housing, apprentices, excess profits duty, &c. Regarding the first-mentioned subject, the Council stated that it was to be regretted that the adoption of the 44-hour week had not resulted in the promised increase of output, which was put forward by the operatives as being assured if shortened hours were adopted.

The PRESIDENT formally proposed the adoption of the report, which MR. A. J. FORSDIKE (Sheffield) seconded.

The Payment of Excess Wages.

The SECRETARY read a letter from the London Master Builders' Association as follows:—"My Council has had brought to its notice cases of non-federated builders who are paying rates of wages or allowances in excess of those provided for in the working rule agreement. In some instances these unauthorised payments have been paid to men employed upon housing schemes, and the Minister of Health has been requested to receive a deputation upon the subject. The practice referred to is not confined to the London district, and my Council feels that the question is of such vital importance to the industry that I am instructed to ask you to arrange for the matter to be brought within the agenda of the Newcastle meetings of the National Federation in order that it may receive full consideration thereat." The letter also suggested that the proposals of the Government for dilution of labour in the trade and to guarantee all men employed full employment for five years, and that such men should be employed by the week, and not by the hour as at present, should be discussed. Continuing, Mr. White said that at the meeting of the Council on the previous day the following resolution was passed:—"That the Secretary be instructed to write from the Federation to the Cabinet pressing it to receive a deputation on the subject, and that a deputation of 12 be appointed who shall have access to all the correspondence with the London Master Builders' Association as the London case is common to all parts of the country."

MR. F. J. GAYER (London) formally proposed the resolution, which MR. T. HOWARTH (Rochdale) seconded,

MR. E. J. BROWN (London), in supporting the motion, said that unfortunately in London they had certain members of the building trade who, whilst they were engaged upon housing schemes, were paying more than the agreed rate of wages. That enabled them to draw labour from their brother builders, who were thereby placed at a disadvantage. They had drawn Dr. Addison's attention to the matter and asked him to receive a deputation, but he had refused. Possibly, if the request was made by the National Federation, he would see his way to grant them a hearing.

MR. W. H. NICHOLLS (Gloucester) said that members on private work were doing exactly the same thing. There were bricklayers now being employed by a contractor who were being paid higher wages than those agreed upon by the area contractor, because the men were out on strike. They ought strongly to deprecate any excess payment being made by members of the trade.

MR. W. F. DREW (Stroud) said they had to complain of firms coming in from outside districts and openly violating the rules of the local federations. The firm which Mr. Nicholls had referred to had been "brought on the carpet" on more than one occasion for breaking the rules by paying higher wages than those agreed upon, and they were again breaking the rules by employing men on strike in other towns. He suggested that they should pass a resolution strongly condemning such action.

The PRESIDENT observed that passing resolutions was a very weak way to deal with that matter. In his district if they found a member was violating the rules they brought him before the Association and dealt with him directly, and if he did not then comply he had "to face the music."

Mr. DREW said they had communicated with the firm in question through the Secretary of their local federation, but had obtained no satisfaction.

Mr. R. B. CHESSUM (London) remarked that he thought a strong protest from that meeting might be useful.

Mr. F. L. DOVE (London) supported the resolution, and said that if they took a case to the Government and pointed out that excess wages were being paid, he thought it likely that the Government would say to the local authority that the excess must be paid out of the rates. If that were done local authorities would not be so keen about spending money in excess wages as they were at present.

Mr. E. J. STRANGE (Tunbridge Wells) proposed the following resolution: "This Federation of Building Trade Employers protests most strongly against the proposal of the Ministry of Health to compel the trade, by legislation, to pay a weekly wage as a guarantee against loss of time through inclement weather, delay in receiving necessary material, &c., upon all contracts in connection with housing, and requests the National Federation to frame and transmit to the Minister of Health a reasoned protest against the proposed legislation, pointing out that such legislation would, if passed, become effective upon building work of all kinds; and it is well understood in the building industry that the joiner is the craft that requires the greatest amount of intelligence and skill, and should, in consequence, be the most highly paid, and that the fact that carpenters, bricklayers, plasterers, &c., are paid identical rates is to be regarded, and is so regarded, as compensating the last-mentioned trades for loss of time owing to weather conditions to which they are necessarily subject, while joiners are not. Also, to point out that the effect must be (*a*) to render the preparation of firm estimates for any out-of-doorwork impossible; (*b*) enormously to increase the cost of building, already far too high; (*c*) inevitably to lead to further restriction or diminution of output, it being the experience of those who have tried the payment for lost time that every advantage has been taken of diminishing the intervals in which work is possible, and that the resolution, if adopted, be presented by deputation to the Minister of Health."

Mr. S. SMETHURST (Oldham) seconded the resolution.

After some further discussion both resolutions were carried, and the deputation was nominated as follows: Messrs. J. Davidson (Yorkshire Federation), F. G. Hodges (Midland), W. Byard (South-Western), J. E. Mayers (North-Western), E. J. Strange (Southern Counties), S. Miller (Northern Counties), D. Anderson (South Wales), F. J. Gayer (London), W. Saint (Eastern Counties); and S. Easten (Newcastle), A. J. Forsdike (Sheffield), W. H. Nicholls (Gloucester), A. G. White (Secretary, London) representing the National Federation.

The report was then adopted.

A National Confederation of Employers' Organisations.

Mr. CHESSUM gave a brief report on the steps now being taken to set up a national confederation of employers' organisations for co-ordinating wages and conditions between various industries. He said he was a member of the committee that was set up with a view of seeing whether some means could not be found of putting a stop to the pernicious practice of various organisations taking away from their industry men whom they had trained and made competent craftsmen. They had received a considerable amount of support for their idea from the shipbuilding and ship-repairing industry, the cabinet trade and the vehicle workers, and some measure of support had been received from the Engineering Employers' Federation. The negotiations would continue; and he hoped they might be able to come to an arrangement by which in the future none of their craftsmen would be able to engage in other industries without first consulting with the National Federation.

The National Conciliation Board.

Following on a short discussion, which was taken in private, the following resolutions were unanimously agreed to: (1) "That this Council instructs the Administrative Committee to send in at the latest by October 31 next, to the National Federation of Building Trades' Operatives our decision to withdraw from the National Conciliation Board scheme. It also recommends to each Regional Federation the sending in by the same date of a similar decision." (2) "That the Council is strongly of opinion that the present rates of wages have reached the utmost limit under present circumstances. It expresses the strong desire that all steps shall be taken to prevent further increases." (3) "This meeting of the Executive Committee of the National Federation of Building Trade Employers pledges itself to

support London or any other area in any action it may decide upon in conjunction with the Administrative Council."

THE SHEFFIELD DISPUTE.

The SECRETARY reported that the Council had considered the dispute in Sheffield between the building trade operatives and the Corporation, and had passed the following resolution :—"That a letter be sent to the National Board of Conciliation and the National Federation of Building Trades' Operatives protesting that the decision of the Conciliation Board has not been carried out, inasmuch as men who were to be ordered to return to work in Yorkshire have not yet done so." Mr. White said the whole point was whether the operatives, because they had a quarrel with the Sheffield Corporation, were justified in withdrawing the men from work, although they had no quarrel with the employers' association.

Mr. CHESSUM, in proposing the resolution, said he thought it was time the Federation made a determined stand in this matter, and let it be known that it was not to be played with by mere idle promises. They were told by the men's representatives that they could only "request" them to go back to work. One of their members had 156 men taken from his job at Sheffield and the previous day he received information by telegraph that 33 had drifted back. That was not obeying the behest of the National Conciliation Board—it was simply flouting its decisions. As long as that attitude was persisted in by the officials of the operatives, the employers were morally entitled to refuse to sit and deliberate upon any board. If the leaders of the operatives were entitled to order men to cease work as they were doing, then they ought equally to order them to resume while the matter in dispute was being negotiated.

The resolution was carried.

PERFECTING THE ORGANISATION OF THE FEDERATION.

A lengthy report was submitted by Mr. White (Secretary) and Mr. W. H. Nicholls, regarding the organisation of the Federation. The Council recommended that the Administrative Committee should determine the policy of the Federation, that the General Secretary should be the chief official, and that an Editorial and Organising Secretary and an Assistant Secretary be appointed. The meeting agreed to accept the report in the main, but it was referred back to the Administrative Committee for amendment on points of detail.

PROPOSED NATIONAL WAGES AND CONDITIONS COUNCIL.

The meeting then proceeded to consider the joint report of the executive councils of the national organisations of employers and operatives for the setting up of a National Wages and Conditions Council for the Building Industry. The machinery proposed is that the Council shall consist of not more than 40 members, half representing the employers and half representing the operatives. The expenses are to be borne equally by each side. The Council is to deal with the following matters, set forth in the schedule, but not with disputes :—(*a*) Rates of wages; (*b*) grading; (*c*) expenses capable of national adjustment; (*d*) working hours; (*e*) overtime and nightwork.

The PRESIDENT, in proposing a resolution approving of the scheme, said he was afraid there was a considerable amount of misunderstanding as to what the proposals really involved. What both representative builders of the country and representatives of the better class of operatives thought was that the present method of dealing with national matters, sectionally, was an undesirable one. At the present moment it was open to any district to come to any decision with the operatives, with the result that a district not only affected its own area but decided the wages and conditions of labour for the whole country. A few years ago when the conciliation boards were set up wages differed throughout the country to an extent that did not obtain at the present day. For the last two or three years wages had been and were being settled on a national basis, and what they desired was that instead of the national basis being dictated from small centres it should be dictated from responsible heads of both employers and operatives. Having regard to the decision just arrived at to drop the National Conciliation Board, the suggested Council was a necessary corollary unless they were going to get to chaos. Between 75 and 80 of the responsible representatives of employers and operatives from all parts of the kingdom had met, and it was only after many hours consultation that the report was drawn up. The conditions that should govern the proposed Council had not yet been formulated, but, of course, the procedure would have to be settled before the Board was constituted, and it would be subject to the ratification of the whole of the members. Any agreement for national wages would also have to be submitted for ratification.

Mr. FORSDIKE seconded the adoption of the report.

Mr. W. H. NICHOLLS said that now they had decided to withdraw from the National Conciliation Board it was evident that something must be set up in its place. It had been an enormous waste of time in the past for each regional area to work out its own wages basis, because, after all, it had to be based on another area which had given way to the men. He welcomed the proposed Council, but he would have been glad if the representatives of the operatives had seen their way to agree to the appointment of an independent chairman. As to the grading, he thought that should only be dealt with by the Council on appeal—each local area should be allowed to settle that particular matter first. From the point of view of stabilising conditions in the building industry, he thought the proposed Council was well worth while. He believed a periodical review of wages, taking into account all the circumstances of the time from an economic point of view, was very much better than giving notice, as from the moment anyone gave notice output went down.

Mr. F. J. GAYER also supported the scheme, and, referring to the proposal for a secret ballot, said he was convinced that under that arrangement the genuine operative would often give a vote in the right direction with a view of stabilising the industry.

Mr. HOWARTH said he understood the painters and the plumbers were coming into the scheme.

THE SECRETARY said he was not sure about the plumbers, but the painters would come in.

Mr. HOWARTH remarked that unless the Council was established on a thoroughly national basis and included all the trades he was afraid it would not be of much use.

THE PRESIDENT said the scheme would not interfere with the local autonomy of the associations on matters that were local; all it proposed was that national matters such as wages and hours and overtime should be adjusted nationally.

Mr. J. M. MACFARLANE (Manchester) said that the Manchester and Salford District had within the last few days given an emphatic vote against the scheme, both in detail and in principle. In his opinion the Federation ought to have the complete constitution before it before being asked to accept it. He thought, too, that it could not proceed with the matter when any section of the trade, such as the plumbers, was left out.

THE PRESIDENT said that all the Federation was asked to do was to agree to set up the Council, and then the members would make suitable rules and regulations which would be submitted to the constituent bodies for approval.

Mr. CHESSUM said that with regard to the suggestion of Mr. Macfarlane that the plumbers and some regions might stand out of the scheme, was it not possible that if a certain area flew in the face of the whole country the operatives and the employers in that area might be told that they would have to come in? It might be possible that if the plumbers were going to be the one operative society to flout the whole of the country, the other unions would decide that the time had come when the plumbers had got to do what they were told.

Mr. D. ANDERSON (Port Talbot) supported the scheme, which, he said, he believed would lead to that solidarity in the building industry which was so sorely needed at the present time. It would be an enormous advantage to have the grading done on a national, instead of a regional basis.

The resolution to adopt the scheme was carried on a show of hands, with nine dissentients.

In reply to Mr. Macfarlane, the PRESIDENT said, in his view, if once a majority of the whole of the employers and operatives in the country agreed with the scheme it would become operative. His firm conviction was that when the matter was thoroughly understood there would not be a single dissentient voice against it in the whole country.

SCARCITY OF APPRENTICES.

Referring to the question of the lack of apprentices, the SECRETARY said the Council did not have time to discuss the matter at its meeting the previous day. He had, however, received a recent return on the subject showing that out of 9,610 mechanics employed there were only 1,353 apprentices. The need for more apprentices was so obvious that it was desirable that that meeting should make some pronouncement on the matter which would be of benefit to the country as a whole.

Mr. HOWARTH said he was afraid a good deal of the difficulty had arisen owing to the fact that in the industrial centres very large wages were given to boys leaving school, and there was no way of getting the boys for apprenticeship. The best machinery was undoubtedly the Juvenile Advisory Committees, and he would like to see the Federation work more in harmony with those bodies. He proposed a resolution that local and regional Welfare Committees be set up in accordance with the recommendations of the report.

Mr. B. RUSHFORTH (Grimsby) seconded the resolution.

Mr. E. J. BROWN, in supporting the motion, referred to the work of the Industrial Welfare Society, which, he said, was doing a good work in helping to train lads as mechanics. Although the Council of that Society contained the representatives of most of the trades, he was very much surprised and disappointed to note that hardly any builders were interesting themselves in it.

The resolution was carried.

THE CEMENT DISCOUNT.

THE SECRETARY reported the receipt of a letter from the London Association intimating the disallowance of the usual discount of 2½ per cent. by the cement merchants.

Mr. MAYERS said that in the North-Western area the discount was withdrawn last April, and the merchants were now demanding payment in advance.

Mr. BROWN said that as soon as they heard of the matter in London they took steps to see that it was brought before the meeting. They had not heard of similar action in any other parts of the country. Their members had had the refund of 2½ per cent. refused in their contracts, which meant that they were being penalised to the extent of 2½ per cent. and getting no profit whatever upon cement. They maintained that it had increased the price of cement, and they had put the matter before the cement manufacturers and asked them to receive a deputation. So far they had refused. The employers in the building trade had been accused of forming rings. The builders themselves had no rings, but the cement merchants apparently had established one of a very severe description, and the question arose as to what the National Federation could do to bring those people to book. It was time that the builders of the country set up their own cement manufactures and supplied themselves, and be no longer subservient to the ring that had been formed in the trade. He thought the best way to deal with the matter would be to refer it to the Administrative Committee, asking it to deal with it at the earliest possible moment.

Mr. D. ANDERSON said that in South Wales the 2½ per cent. was withdrawn on May 1.

The question was referred to the Administrative Committee with power to act.

BELGIANS' GRATITUDE.

THE SECRETARY announced that he had received a letter from the Secretary of the National Federation of Building and Public Works Contractors of Belgium intimating that it had forwarded a piece of sculptured bronze, in recognition of the services which the National Federation rendered the Belgian contractors during their sojourn in the United Kingdom throughout the war period. The letter continued: "We also thought it suitable that the Belgian Government should be associated in our testimony, and we considered it could not do so better than in according to the General Secretary of the English Federation the medal of King Albert, as a just recompense for his devotion towards the Belgian contractors. Our request met with the most favourable reception, and you will find herewith the brevet and medal of the distinction which has been accorded to you." Mr. White added that both mementoes had come safely to hand, and that a very fine bronze plaque, framed in black and gold marble, was at the headquarters of the Federation.

THE PRESIDENT expressed the appreciation of the Federation for the souvenirs from their Belgian friends, which formed a most satisfactory termination of the little they were able to do for their brothers from that country in their time of distress. He was particularly pleased that their Secretary had been awarded the King Albert medal, for Mr. White gave himself unlimited trouble over the matter.

THE SECRETARY, after thanking the President for his remarks, said he felt that in conferring the medal upon him the Belgian Government was really honouring the Federation whose Secretary he was.

Mr. J. W. CAPSTICK (Johannesburg), in response to a welcome from the President, expressed the pleasure it had given him to attend the meetings of the Federation, from which, he said, he had learned that the difficulties of the builders were very much the same in England as in South Africa.

CONCILIATION BOARD AWARDS.

We have received the following letter from a London firm:—

SIR,—In regard to the increases in rates of wages which have been awarded from time to time by the National Conciliation Board for the Building Trades, we shall be pleased to know if the question has been decided as to whether the building owner is liable for the payment of these increases which have been awarded during the progress of contracts which had already been entered into before the dates of these awards, and if any decision of the Courts has been obtained relating to the matter.

In your issue of November 21, 1919, appeared an announcement of the decision of the National Conciliation Board granting increases of wages in the building trades in the London area, to take effect from November 15 last. This decision was referred by the Minister of Labour to the Court of Arbitrations for advice as to whether it was a decision of which he should approve. The Minister of Labour approved of the award and the increases became payable from November 15.

We understand that the awards of the Conciliation Board are enforceable against the employers, and we contend that the term "employers" in this case is intended to refer to the person for whom the work is being carried out (and not the Contractor).

In only one case in which we have been concerned has this point been brought into question (this contract was entered into in the early part of 1919) and in this case it is contended that as the contract was for a definite sum and contained no provision for dealing with increases in wages, the contractors have no claim to the recovery of the increased cost from the building owner.

We shall be glad to have the opinion of some of your readers on the point, as we think this is a matter of general interest to the trade.

"CONTRACTORS."

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Accrington	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½		
Barnsley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Barry	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bath	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	1/7½	1/7½
Bedford	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½		
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1		
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Blackburn	2/2½	2/2½	2/2½	2/2½	2/2½	2/2	2/2½	1/10½–1/11		
Blackpool	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Bolton	2/4	2/4	2/4	2/4	2/4	2/3	2/4	2/0–2/0½		
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Bridgwater	1/9	1/9	1/9	1/9	1/9	1/9	1/9	1/6	1/6	1/6
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Bristol	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Burnley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Cambridge	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Cardiff	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Chelmsford	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Cheltenham	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	1/7½	1/7½
Chester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/1		
Colchester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Crewe	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8–1/8½		
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Doncaster	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
East Glam. and Mon. Valleys	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Exeter	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/6	1/6	1/6
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Gloucester	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½	1/7½	1/7½	1/7½
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3	2/1		
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Guildford	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Harrogate	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Hereford	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½	1/7½	1/7½	1/7½
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Ipswich	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Lancaster	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Lincoln	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/1		
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½		
Llanelly	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
London	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1		
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Luton	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Manchester	2/4	2/4	2/4	2/4	2/4	2/3	2/4	2/0–2/0½		
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	1/11½		
Merthyr Tydfil	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Newport, Mon.	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Norwich	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1		
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Plymouth	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	1/9	1/9
Pontypridd	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Preston	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11		
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½		
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8		
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8		
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	1/9		
Southport	2/4	2/4	2/4	2/4	2/4	2/–	2/4	2/0–2/0½		
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½	2/2½	1/11½		
Stroud	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10	1/7½	1/7½	1/7½
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Swansea	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Taunton	1/9	1/9	1/9	1/9	1/9	1/9	1/9	1/6	1/6	1/6
Torquay	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/5	1/5	1/5
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	1/11½		
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1		
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½		
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9		
Wolverhampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½		
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½		

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv; Competitions iv; Public Appointments lviii Sales by Auction lxii. Certain conditions beyond those given in the following information are imposed in some cases such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom, or place where, quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

AUGUST 6.—**Bridlington.**—HOUSES.—Erection of 4 cottages at North Burton, and 4 at Hunnesley for the R.D.C. Mr. G. Hankinson, Clerk, Offices, Long-lane, Bridlington. Deposit £2 2s.

AUGUST 6.—**Holme Cultram.**—HOUSES.—Erection of two houses at Beckfoot, near Silloth, and two at Newton Arlosh, for the U.D.C. Mr. H. H. Hodgkinson, 64, Lowther-street, Carlisle. Deposit, £1 1s.

AUGUST 6.—**Leeds.**—PAINTING.—For painting exterior, Kirkgate Market, Leeds (area 41 acres). Mr. W. T. Lancashire, City Engineer, Municipal-buildings, Leeds.

AUGUST 6.—**Malmesbury.**—HOUSES.—Erection of houses, viz., Sherston (8), Minety (12), Oaksey (4), Brinkworth (4), Luckington (6), for the R.D.C. Mr. H. de Bertodano, 5, Bloomsbury-square, London. Deposit £1 1s. for each scheme.

*AUGUST 6.—**Ticehurst.**—HOUSES.—Erection of houses at various districts for the R.D.C. Clerk to the Council, Wadhurst.

AUGUST 7.—**Caithness.**—HOUSES.—Erection of 50 houses in various parts of the county, for the C.C. Mr. Sinclair MacDonald, architect, Thurso.

AUGUST 7.—**Goole.**—VARIOUS.—The West Riding Mental Deficiency Act Committee invite tenders for (1) ironfounder (external iron staircase, &c.), (2) painter, at the Rawcliffe Hall, near Goole. West Riding Architect, County Hall, Wakefield.

AUGUST 7.—**Halifax.**—HOUSES.—Erection of 26 houses, Holmfield, for the T.C. Mr. James Lord, Borough Engineer, Crossley-street, Halifax.

*AUGUST 7.—**Harpenden.**—HOUSES.—Erection of 16 for the U.D.C. Mr. Chas. Tuckey, Clerk to the Council, High-street, Harpenden.

*AUGUST 7.—**Ilford, E.**—PAINTING.—Painting the exterior of the Highlands and Loxford Schools, for the Education Committee. Mr. H. Shaw, Engineer and Surveyor, Town Hall, Ilford. Deposit £2 2s.

*AUGUST 9.—**Alcester.**—HOUSES.—Erection of 160 houses on sixteen sites. Mr. H. E. Dicks, 1, Market-place, Evesham. Deposit £1 1s.

AUGUST 9.—**Bingley.**—RENOVATIONS.—Internal and external renovations at Eldwick Sanatorium, near Bingley, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

AUGUST 9.—**Downham.**—COTTAGES.—Erection of cottages at Hilgay, Stow Bardolph, Wiggenhall St. Peter and Wiggenhall St. Mary Magdalen, for the R.D.C. Mr. H. R. B. Wayman, Clerk, Council Offices, Downham Market, Norfolk. Deposit £2 2s.

AUGUST 9.—**Dumfries.**—HOSTEL.—Adaptation of Woodbank Hotel to hostel for the Education Authority. Mr. J. M. Dick Peddie, architect, 8, Albyn-place, Edinburgh. Deposit £1 1s.

AUGUST 9.—**Glastonbury.**—REPAIRS.—Repairs, &c., at farmhouse at Cradle Bridge, for the U.D.C. Borough Surveyor, Glastonbury.

AUGUST 9.—**Macclesfield.**—HOUSES.—Erection of 16 houses at Poynton, with works, for the R.D.C. Mr. G. Clayton, architect, Poynton, near Stockport. Deposit £2 2s.

AUGUST 9.—**St. Neots.**—HOUSES, &C.—Erection of two or more houses (not exceeding 100) and roads and sewers in the parishes of St. Neots and Eynesbury, for the R.D.C. Mr. Barry Parker, F.R.I.B.A., Letchworth, Herts. Deposit, £1 1s.

AUGUST 9.—**Wangford.**—HOUSES.—Erection of two pairs of cottages at St. James, for the R.D.C. Mr. A. F. Royds, 2, Gray's Inn-square, London, W.C. 1. Deposit £1 1s.

AUGUST 10.—**Bridgwater.**—VARIOUS.—Alterations to Police Court and provision of sanitary appliances for the T.C. Surveyors' Department, Municipal Buildings, Bridgwater.

AUGUST 10.—**Cheltenham.**—HOUSES.—Erection of houses at Prestbury (10), Staverton (6), The Reddings (4), Badgeworth Cross (4), and Up Hatherley (4). Mr. G. H. Phillott, architect, 31, Promenade, Cheltenham. Deposit £1 1s.

AUGUST 10.—**Goole.**—HOUSES.—Erection of 42 houses, for the U.D.C. Mr. J. H. Castle, Surveyor, Council Offices, Goole. Deposit £2.

AUGUST 10.—**Handsworth.**—HOUSES.—Erection of 16 houses on the Park-lane site, for the U.D.C. Messrs. Creswick & Son, 9, East Parade, Sheffield.

AUGUST 10.—**Handsworth.**—HOUSES.—Erection of 24 houses on the Stubbin-lane site, Woodhouse, for the U.D.C. Council Offices, Woodhouse.

AUGUST 10.—**Hemsworth.**—HOUSES.—Erection of 450 houses of various types, and six combined houses and shops, South Kirkby, also for the roadmaking and construction of sewers for the R.D.C. Messrs. Garside and Pennington, Ropergate, Pontefract. Deposit £1 1s.

AUGUST 10.—**Nottingham.**—PAINTING.—External and internal painting at various sub-police stations and Central Police Station, Guildhall. City Architect's Office, Guildhall, Nottingham. Deposit £1.

AUGUST 10.—**Shoeburyness.**—PAINTING.—For painting two gasholders, each of approximately 60,000 cubic ft. capacity, for the U.D.C. Mr. F. J. Glasscock, Gas Manager, Shoeburyness.

AUGUST 10.—**Willesden.**—GARAGE.—Erection of garage, mess rooms, &c., at the Electricity Works, for the U.D.C. Mr. F. Wilkinson, Surveyor, Municipal Offices, Kilburn, N.W.

AUGUST 11.—**Bournemouth.**—COTTAGES.—Seventy houses at Winton and 30 at Southbourne, for the T.C. Mr. F. P. Dolamore, Borough Engineer, Municipal Buildings, Bournemouth.

AUGUST 11.—**Dewsbury.**—PAINTING.—Painting hospital buildings for the Joint Hospital Board. Borough Engineer, Town Hall, Dewsbury.

AUGUST 12.—**Backnamuliagh.**—SCHOOL.—Erection of National School, for the Managers. Mr. J. Murphy, Meeting-street, Dromore, Co. Down.

AUGUST 12.—**Brentford.**—HOUSES, ETC.—Erection of 76 and subsequently 70 houses, and construction of roads and sewers for the U.D.C. Mr. W. J. W. Westlake, Surveyor, Council Offices, Boston-road, Brentford.

AUGUST 12.—**Sedgefield.**—HOUSES.—Erection of 18 houses, in pairs, at Bishop Middleham, for the R.D.C. Mr. James Stones, Union Offices, Sedgefield. Deposit £3.

*AUGUST 13.—**Portishead.**—HOUSES.—Erection of 30 houses for the U.D.C. Mr. H. Stratton Davis, M.S.A., 79, Northgate-street, Gloucester. Messrs. Bernard & Son, Surveyors, 26, Orchard-street, Bristol.

AUGUST 13.—**Whitburn.**—HOUSES.—Erection of 74 houses at Murraygate, for the T.C. Mr. William Baillie, architect, 2, West Regent-street, Glasgow.

*AUGUST 14.—**Gloucester.**—HOUSES.—Erection of 50 houses for the City Council. The City Surveyor, Guildhall, Gloucester. Deposit £1 1s.

AUGUST 14.—**Macclesfield.**—PAINTING.—External Decoration of the Technical School, Park Green, for the T.C. Mr. Edward Hamson, Borough Surveyor, Town Hall, Macclesfield.

*AUGUST 16.—**Ammanford.**—HOUSES.—Erection of 100 houses for the U.D.C. Mr. David Thomas, 22A, Quay-street, Ammanford.

AUGUST 16.—**Bacup.**—PAINTING.—Painting extension of public baths for the T.C. Mr. W. H. Newton, Borough Engineer, Bacup.

AUGUST 16.—**Bedford.**—HOUSES.—Erection of six houses each at Pavenham and Wootton, for the R.D.C. Mr. K. Gammell, architect, 17, St. Peter's-street, Bedford.

*AUGUST 16.—**Biggleswade.**—HOUSES.—Erection of 188 houses, the construction of roads and other works of development. Council Offices, Biggleswade. Deposit £2 2s.

AUGUST 16.—**Chesterfield.**—ADDITIONS.—Erection of a new Outpatients' Department, Holywell-street, for the Governors of the Chesterfield Hospital. Mr. W. Cecil Jackson, 6, Stephenson-place, Chesterfield. Deposit £1 1s.

AUGUST 16.—**Gateshead.**—DISPENSARY.—Erection of tuberculosis dispensary for the T.C. Borough Engineer, Town Hall, Gateshead.

AUGUST 16.—**Retford.**—ADDITIONS.—Erection of a new block at Rampton State Institution, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, Storey's Gate, Westminster, S.W. Deposit £1 1s.

*AUGUST 16.—**Wealdstone.**—HOUSES.—Erection of whole or any portion of 140 houses in the district for the U.D.C. Mr. H. Walker, Surveyor to the Council, Council Offices, Wealdstone. Deposit £2 2s.

*AUGUST 16.—**Wokingham.**—COTTAGES.—Erection of ten pairs of cottages, for the R.D.C. Mr. P. H. Phipps, Clerk to the Council, Council Offices, Board Room, Barkham-road, Wokingham.

AUGUST 16.—**Worksop.**—ADDITIONS.—Building of additional bedrooms at the Kilton Hill Infirmary, Worksop, for the Board of Guardians. Mr. F. Hopkinson, architect, 81, Bridge-street, Worksop. Deposit £2 2s.

AUGUST 17.—**Glossop.**—FLOORS, &C.—Taking up the present stone floors and relaying with wood blocks certain floors and corridors at the Poor Law Institution, Glossop. Mr. Chas. F. V. Fenton, Clerk, Poor Law Offices, Glossop.

AUGUST 17.—**Hazelgrove.**—HOUSES.—Erection of 32 houses in pairs, for the U.D.C. Messrs. Adshead & Topham, 23, King-street, Manchester. Deposit £1 1s.

AUGUST 18.—**Barnet.**—HOUSES.—Erection of 24 cottages at Boreham Wood for the R.D.C. Mr. H. W. Poole, Clerk, 93, High-street, Barnet. Deposit £2 2s.

AUGUST 18.—**Crook.**—PAINTING.—Painting interior of Tuberculosis Pavilion at Helmington-row Hospital, for the Auckland, Shildon and Willington Joint Hospital Board. Mr. S. Adams, Clerk, Union Offices, Bishop Auckland.

*AUGUST 18.—**Greenwich.**—HOUSES.—Erection of 95 pairs of houses, for the Metropolitan Borough. Mr. Alfred Roberts, architect, 92, London-road, Greenwich. Deposit £2 2s.

*AUGUST 18.—**Wandsworth.**—Painting works of two public institutions, for the Guardians of the Wandsworth Union. Mr. F. J. Curtis, Clerk, Union Offices, St. John's Hill, Wandsworth, S.W. 18.

*AUGUST 20.—**Kew.**—Extension of the Ministry of Labour Claims and Records Office at Kew. The Secretary, H.M.O.W., Storey's Gate, Westminster, S.W. 1. Deposit £1 1s.

AUGUST 23.—**Devon.**—BRIDGES.—Rebuilding Ashmill and Bishmill Bridges, for the C.C. Mr. R. M. Stone, County Surveyor, The Square, Barnstaple.

AUGUST 23.—**Morley.**—PAINTING.—Painting of the exterior of Grange Hospital, Churwell, for the T.C. Mr. F. Turner, Borough Engineer, Town Hall, Morley.

*AUGUST 23.—**Wombwell.**—HOUSES.—Erection of 386 houses, for the U.D.C. Mr. D. Roberts, M.S.A., architect, Park-street, Wombwell. Deposit £2.

*AUGUST 25.—**Brentford.**—PAINTING.—External Painting and repairs for the Guardians of the Union for the Union. Mr. F. E. Harmsworth, Clerk, Union Offices, Isleworth, Middlesex.

AUGUST 27.—**Bristol.**—GRANARY.—Construction of ferro-concrete silo granary of 20,000 tons capacity for the Docks Committee. Mr. J. A. Peace, Engineer, Engineers' Office, Avonmouth Dock. Deposit £5.

*AUGUST 27.—**Horsham.**—HOUSES.—Erection of various pairs of houses, for the R.D.C. Mr. W. R. Guildford, Surveyor to the Council, Albion-terrace, Horsham. Deposit £1 1s.

AUGUST 27.—**Rossington.**—SCHOOL.—Erection of school at Rossington, for the West Riding E.C. West Riding Education Architect, County Hall, Wakefield. Deposit £1 1s.

*AUGUST 27.—**Stepney, E.**—TENEMENT BUILDING.—Erection of a three-storey tenement building at Jubilee-street, Mile End, Old Town. Mr. M. W. Jameson, Borough Engineer, Municipal Offices, 15, Great Allie-street, Whitechapel, E.

AUGUST 28.—**Maldon.**—HOUSES.—Erection of 8 pairs of houses in Cherry Garden-road for the T.C. Mr. T. R. Swales, Borough Engineer, Municipal Offices, Maldon.

*AUGUST 31.—**Sutton.**—Houses, erection of 72 houses for the U.D.C. on the Gander Green-lane, Clensham-lane, and Collingwood-road sites. Council's Architect (Mr. Larman Luck, M.I.M.E.), Muncipal Offices, Sutton, Surrey. Deposit £2 2s.

NO DATE.—**Urmston.**—HOUSES.—Erection of 50 houses, in pairs, upon a site off Flixton-road, Urmston, for the U.D.C. Mr. W. Longworth, architect, 4, St. Mary's Parsonage, Manchester.

FURNITURE, MATERIALS, etc.

AUGUST 9.—**Warrington.**—FURNITURE, &C.—Tenders are invited for the supply of furniture and handwork tools for school use, for the Education Committee. Mr. J. Moore Murray, M.Sc., Secretary, Education Office, Warrington.

AUGUST 10.—**London.**—STORES.—Supply of wicks, lubricating oils, &c., paints, drysalteries, &c., platelayers' tools, lamps and fittings, acid open hearth steel boiler plates, for the Great Indian Peninsula Railway Co. Mr. R. H. Walpole, Secretary, 48, Copthall-avenue, E.C. 2. Fees, 10s. for first three classes 7s. 6d. for fourth and 5s. for fifth.

AUGUST 10.—**Manchester.**—PITCH.—Supply of pitch for paving purposes, for the Tramways Department. Mr. J. M. McElroy, general manager, Corporation Tramways, 55, Piccadilly, Manchester.

AUGUST 17.—**Portsmouth.**—STORES.—For supply of general stores for the Tramways Committee. Mr. V. G. Lironi, Engineer's Office, Vivash-road, Fratton, Portsmouth.

ENGINEERING, IRON AND STEEL.

AUGUST 7.—**Watford.**—BRIDGE.—Rebuilding of Cassiobury Bridge, Watford, for the Hertfordshire C.C. Lt.-Col. A. Ernest Prescott, County Surveyor, Hatfield. Deposit £2 2s.

AUGUST 7.—**Watford.**—BRIDGE.—Widening and strengthening Watford Bridge, Watford, for the Hertfordshire C.C. Lt.-Col. A. Ernest Prescott, County Surveyor, Hatfield. Deposit £2 2s.

AUGUST 9.—**Frimley.**—BRIDGE.—Widening of Frimley Bridge over the River Blackwater between Frimley and Farnborough Green, for the C.C.'s of Southampton and Surrey. Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit £1 1s.

AUGUST 11.—**Kirkcaldy.**—PIPES, &C.—Providing 273 tons of 8 in. and 6 in. dry sand cast iron pipes and special castings, for the District Committee. Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh.

AUGUST 13.—**London.**—BRIDGEWORK.—Supply of bridgework (3-100 ft. spans), for the Burma Railway Co. Mr. W. Home, Managing Director, 199, Gresham House, Old Broad-street, London, E.C. 2. Fee £1.

AUGUST 14.—**West Stafford.**—FENCING.—Erection of about 75 yards of unclimbable iron fencing around the New Burial Ground; and a pair of ornamental iron or wood entrance gates for the Parish Council. Rev. Corbett Winder, West Stafford,

*AUGUST 17.—**Slough, Bucks.**—AUTOMATIC FLUSHING TANKS.—Fixing complete of three 20 gallon tanks, for the Eton Union Workhouse; also three syphon traps. Mr. H. L. C. Barrett, Clerk to the Guardians, Slough.

AUGUST 18.—**Manchester.**—MATERIALS.—Supply of tubes, tees, elbows, &c., at the Langho Colony, for the Board of Guardians. Medical Superintendent, Epileptic Colony, Langho, near Blackburn.

AUGUST 20.—**Whitehaven.**—RAILWAY.—The Directors of the Whitehaven Colliery Co., Ltd., invite tenders for the construction of a mineral railway from the Furness Railway to their Ladysmith Colliery. H. C. Reynalds, Secretary, Whitehaven. Deposit, £2 2s.

AUGUST 23.—**South Molton.**—BRIDGES.—Rebuilding of Ashmill and Bishmill Bridges, South Molton, for the Devon C.C. Mr. R. M. Stone, County Surveyor, The Square, Barnstaple.

AUGUST 26.—West Wickham.—PUMPING MACHINERY—Supply to the Metropolitan Water Board of one triple expansion pumping engine at West Wickham Well, Kent. Mr. Henry E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C.1. Deposit £5.

SEPTEMBER 7.—**London.**—QUAY, &C.—Construction of quay and the foundations of a warehouse, consisting of reinforced concrete piling, concrete quay wall, Upfilling, &c., for the Buller's Wharf Co. Messrs. D. & C. Stevenson, 84, George-street, Edinburgh. Deposit £2 2s.

SEPTEMBER 8.—**Madras.**—PIPES.—Supply of about 220 tons of cast-iron socket and spigot pipes, together with special castings, sluice valves, &c., for the Corporation. Messrs. James Mansergh & Sons, Agents to the Corporation of Madras, 5, Victoria-street, Westminster, S.W. Charge 5s.

SEPTEMBER 30.—**Australia.**—PIER.—Construction of ocean pier for the Manly Municipality, New South Wales. Messrs. Gordon & Gotch, 16, St. Bride-street, E.C.

ROAD, SANITARY, AND WATER WORKS.

AUGUST 7.—**Henfield.**—SLUICE.—Construction of a concrete sluice into the River Adur, at Holland Sewer, Henfield, for the Commissioners of Bramber Sewers. Mr. G. A. Flowers, Clerk, Steyning.

AUGUST 9.—**Blackwood.**—DRAINAGE.—Sewerage work at Blackwood, Kirkmuirhill, Lochanbank, and Auchenheath, and the construction of outfall sewers to the River Nethan, for the County of Lanark District Committee. Messrs. Warren & Stuart, 94, Hope-street, Glasgow. Deposit £1 1s.

AUGUST 9.—**Chipping Norton.**—SEWERAGE WORKS.—For sewerage works at Charlbury, for the R.D.C Messrs. Howard, Humphreys & Son, 28, Victoria street, Westminster, S.W. Deposit £2 2s.

AUGUST 9.—**Dinnington.**—ROADS.—Laying of about 830 square yards of cement concrete footpaths at Dinnington Colliery. Mr. David Hope, Highway Surveyor, Ponteland.

AUGUST 9.—**Loftus.**—ROADS.—Making up of Liverton-terrace, Liverton Mines, for the U.D.C. Mr. B. J. Wormleighton, Surveyor, Town Hall, Loftus, Yorks.

AUGUST 9.—**Sefton.**—SEWER.—Laying 60 yards of 9 in. stoneware pipe sewer for the U.D.C. Mr. E. B Bailey, architect, 37, Moorfields, Liverpool.

AUGUST 9.—**Stirling.**—WATERWORKS.—For cutting trenches for and laying about 2 miles of 3 in. diameter steel tubes, &c., for the Central District Committee of the County. Messrs. Crouch & Hogg, C.E., 14, Blythswood-square, Glasgow. Deposit £1.

AUGUST 10.—**Cheriton.**—RECREATION GROUND.—For general lay-out, tree planting, building of walls, supply of fencing etc., for construction of Stanley-road recreation ground for the U.D.C. Mr. A. S. Lilley, Surveyor, Public Offices, Cheriton.

AUGUST 12.—**Bognor.**—SEWERAGE WORK.—Construction of a new sewage tank and pumping station and a new sea outfall pipe, for the U.D.C. Mr. E. J. Silcock, Sanctuary House, Tothill-street, Westminster. Deposit £5.

AUGUST 12.—**Leigh.**—SEWAGE WORK.—Construction of filter beds and settling tanks for the Leigh and Atterton Joint Sewerage Board. Messrs. Greenough & Son, 3, Silk-street, Leigh.

AUGUST 13.—**Burntisland.**—ROADS, &C.—For laying out site for the Housing Scheme for 138 houses at The Haugh. Mr. James A. Waddell, Burgh Surveyor, Burntisland. Deposit £1 1s.

AUGUST 14.—**Bowness.**—CHURCHYARD.—For cutting the new churchyard drain at Bowness-on-Solway. Rev. Mitton, Bowness Rectory.

AUGUST 16.—**Kirkcaldy.**—ROADS.—For the road-making and sewerage works of housing scheme. Mr. James Gentles, F.F.S., 184, High-street, Kirkcaldy. Deposit £1 1s.

AUGUST 16.—**Maesteg.**—ROADS, &C.—Laying out Maesteg Park site housing scheme, for the U.D.C. Mr. S. J. Harpur, Talbot-street, Maesteg. Deposit £2 2s.

AUGUST 16.—**Newport, Mon.**—SEWERS.—For sewerage works comprising 556 yards run of 3 ft. brick sewer in tunnel, 149 yards run of 3 ft. brick sewer in open cutting, for the T.C. Borough Engineer's Department, Town Hall, Newport, Mon. Deposit £1 1s.

AUGUST 17.—**Bedford.**—DRAINAGE.—Laying 710 yards of 12-inch, and 620 yards of 9-inch sewers, &c., at Great Barford, for the R.D.C. Council Offices, 115, High-street, Bedford.

AUGUST 19.—**Leeds.**—SEWER.—Construction of part of the Wyke Beck Valley Sewer, &c., for the T.C. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds. Deposit £1 1s.

AUGUST 21.—**Padiham.**—SEWER.—Relaying of a 2 ft. diameter sewer across the River Calder, for the U.D.C. Mr. R. Ratcliffe, Surveyor, Council Offices, Padiham.

AUGUST 24.—**Chatham.**—STREET WORKS.—Making of various roads for the T.C. Borough Surveyor, Town Hall, Chatham.

AUGUST 28.—**Maldon.**—WATER-MAIN.—Providing and laying 185 yards of 3-inch cast-iron water-main for the T.C. Borough Engineer, Municipal Offices, Maldon.

AUGUST 30.—**Cowes.**—ROAD.—Construction of 36 ft. road, for the U.D.C. Mr. S. E. Tomkins, "Kensington," Mill-hill, Cowes.

✱AUGUST 31.—**Kingston-upon-Thames.**—ROADS AND SEWERS.—Construction on the Borough Council's housing site of roads and sewers. Town Clerk, Clerk's Office, Kingston-upon-Thames. Deposit £2 2s.

Auction Sales, Tenders, &c.

✱AUGUST 11.—**Garston.**—Messrs. Geo. N. Dixon & Co. will sell, by order of Messrs. Bullen Bros., who are retiring from business, at Lucania-street, the woodworking machinery and builders' plant. Auctioneers, 41 Castle-street, Liverpool.

✱AUGUST 12.—**London, E.C.**—Messrs. J. T. Skelding & Co. will sell, at 6, Moorgate-street, E.C., office furniture and fittings, comprising a large selection. Auctioneers, 48, Gresham-street, Guildhall, E.C. 2.

✱AUGUST 17.—**North Walsham, Norfolk.**—Messrs Joseph Hibbard & Sons will sell, by order of the Board of Trade, at Westwick East, near North Walsham Station, stock of English timber. Auctioneers, Newington Green, Islington, N. 1.

✱AUGUST 18.—**London, E.**—Messrs. J. T. Skelding & Co. will include in the important sale of office furniture at the Stores, 12 and 14, Chambers-street, Leman-street, 3,000 ft. super of mahogany and deal partitioning. Auctioneers, 48, Gresham-street, Guildhall, E.C. 2.

✱AUGUST 18.—**Shoreham, Sussex.**—Messrs. Harris & Gillow will sell, by order of the Disposal Board, very valuable and extensive camp buildings, corrugated iron and wood hutments, at the No. 9 Lines, Shoreham Camp. Auctioneers, 21, North Audley-street, Grosvenor-square, W.1.

✱AUGUST 19.—**Codford.**—Messrs. Fortt, Hatt & Billings will sell by order of the Disposal Board at Codford, near Warminster, a very large selection of camp buildings, hutments, sheds, &c. Auctioneers, 3, Burton-street, Bath.

✱AUGUST 24, 25 AND 26.—**South Hampshire.**—Messrs. Hall, Pain & Goldsmith will sell, by direction of the Disposal Board, at Beaulieu Aerodrome, South Hampshire, permanent buildings, corrugated iron buildings, sectional huts, pumping plant, &c. Auctioneers, 48, West-street, Fareham.

✱AUGUST 28.—**East Retford, Notts.**—Messrs. Henry Spencer & Sons will sell at their saleroom, The Square, Retford, an excellent freehold dwelling-house and business premises.

✱SEPTEMBER 1 AND 2.—Messrs. Joseph Hibbard & Sons will sell by order of the Board of Trade at the timber depot at Bylaugh, 3 miles from East Dereham Station, the well-cut stock of English timber. Auctioneers, Newington Green, Islington, London, N.1.

SEPTEMBER—**Norwood, S.E.**—Messrs. Geo. Trollope & Sons will sell, by order of the Trustee, the valuable freehold building estate known as Falkland Park. Auctioneers, 25, Mount-street, London, W.1.

OCTOBER 13.—**London, S.W.**—Messrs. Geo. Trollope & Sons will sell, at Winchester House, E.C., the valuable freehold property situate 130, Brompton-road, and Nos. 2, 4, 6, 8, Montpelier-street, S.W. Auctioneers, West Halkin-street, Belgrave-square, S.W.1.

OCTOBER ——**London, W.1.**—Messrs. Knight, Frank & Rutley will sell, in the Hanover-square Estate room, freehold island site, situate Euston-road. Auctioneers, 20, Hanover-square, W.1.

Competitions.

(See Competition News, page 145.)

Public Appointments.

✱AUGUST 7.—**Tottenham.**—Resident Engineer required by the Tottenham U.D.C. for the Council's Housing Scheme. Mr. Reginald C. Graves, Clerk to the Council, Town Hall, Tottenham, N. 15.

✱AUGUST 9.—**Durham.**—Clerk of Works required by the R.D.C. during construction of roads, &c. for the R.D.C. Messrs. Mayes & Gray, architects, Wingate, Co. Durham.

✱AUGUST 9.—**Hertfordshire.**—Architectural Assistant, in County Surveyor's Office required by the C.C. Mr. A. Ernest Prescott, County Surveyor, Hatfield.

✱AUGUST 10.—**Greenwich.**—Male Commercial Clerk (second-class grade). Mr. Frederick J. Simpson, Town Hall, Greenwich, S.E. 10.

✱AUGUST 12.—**Exeter.**—Architectural Assistant required by the City Council. Mr. John Bennett, City Architect, Exeter.

✱AUGUST 14.—**Blackpool.**—Architectural Assistant required by the Borough. Mr. Francis Wood, Borough Engineer, Municipal Buildings, Town Hall Street, Blackpool.

✱AUGUST 16.—**Aberdeen.**—Head of the Architecture Department required by the Secretary of the Aberdeen Robert Gordon's Technical College.

✱AUGUST 16.—**Colchester.**—Prime Cost Clerk required for the Borough Council's Housing Scheme. Borough Engineer and Surveyor, Town Hall, Colchester.

✱AUGUST 16.—**Durham.**—Experienced Quantity Surveyor in Architectural Dept. of County Surveyor's office. Applications to County Surveyor, Shire Hall, Durham.

✱AUGUST 16.—**Durham.**—Finance Clerk in the County Surveyor's Office. Applications to County Surveyor, Shire Hall, Durham.

✱AUGUST 16.—**East Riding of Yorkshire.**—Senior Architectural Assistant for the County Council. County Architect, County Hall, Beverley.

✱AUGUST 17.—**Slough.**—Assistant required for Housing Scheme, by the U.D.C. Mr. Alan Bromly, 4, William-street, Slough.

✱AUGUST 18.—**Sheffield.**—Clerk of Works required by the City Council. Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield.

✱AUGUST 21.—**Bradford.**—Architectural Assistant and Clerk of Works required by the City Council. Mr. W. Williamson, F.R.I.B.A., City Architect, Town Hall, Bradford.

✱AUGUST 21.—**Tewkesbury.**—Architectural Assistant required by the Borough Council in the Borough Surveyor's Office. Mr. H. Alec. Badham, Town Clerk, Tewkesbury.

✱AUGUST 30.—**Brentford.**—Clerk of Works for the Union. Salary £10 10s. per week. Clerk to the Guardians, Union Offices, Isleworth, Middlesex.

SEPTEMBER 27.—**Kingston-upon-Thames.**—Instructor in building construction. Mr. H. T. Roberts, B.A., Principal, Technical Institute.

SEPTEMBER 29.—**Warwick.**—**County Architect required by the County. Salary £800 a year. Office, staff, motor cycle and sidecar supplied, and reasonable travelling expenses. Clerk to the Council, Leamington.**

King Edward Memorial.

The equestrian statue of King Edward, by Mr. Bertram Mackennal, A.R.A., which will be erected in Waterloo-place, is now being cast in bronze. The laying out of the river park at Shadwell is engaging the attention of the Memorial Committee.

STABLE FITTERS TO THE KING.

MUSGRAVE'S PATENT

STABLE FITTINGS.

Latest improvements in construction, including—

DRAINAGE, PAVEMENT, VENTILATION.

MODERATE PRICES.

Write for illustrated catalogue. Established 1842.

MUSGRAVE & CO., Ltd.

SHOWROOMS:

Sardinia House, Kingsway, London, W.C.; 42, Deansgate, Manchester; 24, Queen Street, Cardiff.

Manufactories: St. Ann's Ironworks & Cromac Foundry, Belfast.

CISTERNS

ANY SIZE.

ANY GAUGE.

THE

London Galvanised Iron Co.

27 Wharf Road, City Road, N.

Telephone—North 2783 (two lines)

EARLEY for CARTAGE

PARK 3700

135, Westbourne Park Road, W.2

To Architects, Builders, etc.

TILLEY BROS.

undertake the repairs, cleaning, repolishing and relacquering of all

Brasswork

Bronzing in all colours. Fittings removed from Banks, Offices, etc., and refixed by experienced workmen.

Estimates given.

53, KINGSLAND ROAD, E.2

CONCRETE BUILDING BLOCKS

27 ins. by 9 ins. by 6 ins. high, with hollows.

Crushing tests show over 100 tons per block. Immediate delivery by rail or lorry from matured stock. Full particulars and prices from:—

THOMAS & GREEN LTD.,

Soho Mills, Wooburn Green, Bucks.

Telephone 1 2, Bourne End. *Telegrams:* Thomas, Wooburn.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 16 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 7 0	Best Blue Pressed Staffordshire	10 6 0
Best Stourbridge Fire bricks	11 15 0	Do. Bullnose	10 8 6
		Blue Wire Cuts	8 8 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	27 10 0	D'ble Str'tch'rs	35 0 0
		D'ble Headers	32 0 0
Headers	27 0 0	One Side and two Ends	36 0 0
Quoins. Bullnose and 4½in. Flats	33 0 0	Two Sides and one End	34 10 0
		Splays and Squints	34 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	20 6	per yard.	delivered
Pit Sand	24 6		
Thames Sand	26 6	„ „	2 miles
Best Washed Sand	25 6	„ „	radius
½in. Shingle for Ferro-Concrete	24 6	„ „	Padding-ton.
¼ in. „ „	25 6	„ „	

Per ton. delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	4 4 6	..	4 10 0

77/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above.	10 0
Best Ground Blue Lias Lime 2 19 6 at rly. depot.	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime	70s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 43s. 6d. per ton at rly. dpt.	

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 0
Do. do. delivered on road waggons at Nine Elms Depot	3 1
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	4 7
Do. do. delivered on road waggons at above stations, per ft. cube	4 8
White basebed, 3d. per ft. cube extra.	
NOTE.—½d ft. cube extra for every foot over 30 ft. average, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
Scappled random blocks Per Ft. Cube	16 4
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	11 4½
6 in. rubbed two sides, ditto „	12 9½
3 in. sawn two sides slabs (random sizes) „	5 1
2 in. to 2½ in. sawn one side slabs (random sizes) „	3 0
1½ in. to 2 in. ditto, ditto „	2 7
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	12 3
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	9 9
6 in. rubbed two sides ditto „	11 7
3 in. sawn two sides slabs (random sizes) „	4 7
3 in. ditto, ditto „	5 11½
2 in. self-faced random flags Per Yard Super	14 8

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	65 0	per standard
4 × 9	65 0	„
4 × 8	55 0	„
4 × 7	50 0	„
3 × 8	48 0	„
3 × 7	47 10	„
2½ × 7	47 10	„
3 × 6	47 0	„
3 × 11	62 10	„
2 × 11	64 0	„
3 × 9	60 0	„
2½ × 9	60 0	„
3 × 4½	47 10	„
3 × 4	47 10	„

PLANED BOARDS.

1 × 11	67 10	„
1 × 9	65 0	„

PLAIN EDGE FLOORING.

Inches		
¾	40/-	square
¼	45/-	„
1	52/6	„
1¼	66/-	„
1½	75/6	„

TONGUED AND GROOVED FLOORING.

Inches		
1	47/6	square
1¼	60/-	„
1½	70/-	„

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	34/-	square
¼	42/6	„
1	54/-	„

BATTENS.

Inches	£ s.	
¾ × 2	45 0	per standard

SAWN LATHS.

Per bundle	0 6	0

Dry Wainscot Oak, per ft. super, as inch	0	3	6	to	0	4 0
¼ in. do. do.	0	3	0	..		—
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0	3 0
Cuba. Mahogany	0	4	0	to	0	4 6
Teak (Rangoon, Moulmein or Java), per load	75	0	0	to	85	0 0
American Whitewood planks, per ft. cube	0	18	0	to	1	4 0
Scotch Glue, per cwt.	10	0	0	..		—
Liquid Glue, per cwt.	6	12	0	..		—

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	55 0 0
„ „ „	22 by 12	44 7 6
First quality „	22 by 11	40 15 0
„ „	20 by 12	40 7 6
Best Blue Portmadoc	20 by 10	35 0 0
„ „	18 by 10	27 17 6
First quality „	18 by 9	22 15 0
„ „	16 by 10	21 10 0
„ „	16 by 8	16 17 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 15 0
Ditto hand-made ditto	7 0 0
Ornamental ditto	7 2 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	38 0 0
Plain Compound Girders	42 0 0
„ Stancheons	44 0 0
In Roof Work	48 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Sizes up to and including ¾ in. Tubes.	Sizes up to and including 2in. Tubes.	Fittings.	Sizes 2¼ in. to 6 in. Tubes.	Fittings.
Gas	+ 7½	+ 5	— 5	— 2½	— 17½
Water	+17½	+15	Net	+ 6½	— 15
Steam	+28½	+26½	+ 5	+ 16½	— 12½
Gal. Gas	+32½	+30	+ 5	+ 22½	— 7½
„ Water	+45	+42½	+ 10	+ 33½	— 5
„ Steam	+57½	+55	+ 15	+ 45	— 2½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	6 1	4 5	5 4
2½ in. „	7 4	4 11	6 8
3 in. „	8 11	5 4	8 0
3½ in. „	9 11	6 8	9 4
4 in. „	10 11½	7 8	10 9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	4 5	2 6	3 4
2½ in. „ „	5 0	3 0	4 1
3 in. „ „	6 1	3 7	5 4
3½ in. „ „	7 2	4 3	6 3
4 in. „ „	7 6	5 2	7 7

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 12s. .. 5 in., 15s. .. 6 in., 18s.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	34 10 0	to	35 10 0
Staffordshire Crown Bars good merchant quality	35 0 0	..	37 0 0
Staffordshire "Marked Bars"	36 10 0	..	38 10 0
Mild Steel Bars	36 0 0	..	38 0 0
Steel Bars. Ferro-Concrete quality, basis price	36 0 0	..	38 0 0
Hoop Iron, basis price	44 0 0	..	46 0 0
„ „ Galvanised	62 0 0	..	66 0 0
Sheet Iron Black—			
Ordinary sizes to 20 g.	50 0 0	..	52 0 0
„ „ 24 g.	51 0 0	..	53 0 0
„ „ 26 g.	53 0 0	..	55 0 0
Sheet iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	58 0 0	..	60 0 0
Ordinary sizes to 22 g. and 24 g.	59 0 0	..	61 0 0
Ordinary sizes to 26 g.	61 0 0	..	62 0 0
Ordinary sizes to 20 g. „ „ 22 g. and 24 g.	58 0 0	..	60 0 0
	59 0 0	..	61 0 0
Ordinary sizes to 26 g.	61 0 0	..	62 0 0

METALS (*Continued*)

	Per ton in London £ s. d.		£ s. d.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	60 0 0	..	62 0 0
Ordinary sizes, 22 g. and 24 g.	61 0 0	..	63 0 0
Ordinary sizes, 26 g.	62 0 0	..	65 0 0
Sheet Iron, Galvanised, flat, best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	60 0 0	—	62 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	61 0 0	..	63 0 0
Best Soft Steel Sheets, 26 g.	63 0 0	..	64 0 0
Cut Nails, 3 in. to 6 in.	47 10 0	..	48 10 0

(Under 3 in. usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	52 0 0	..	—
Pipe in coils	52 10 0	..	—
Soil Pipe	55 0 0	..	—
Compo pipe	56 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 1s. cwt. extra.

Old lead, ex London area, at Mills per ton	32 0 0	..	—
Do., ex country, carriage forward per ton	33 0 0	..	—

COPPER—				
Strong Sheet per lb.	0	2	3	.. —
Thin „ „	0	2	4	.. —
Copper nails „	0	2	3	.. —
Copper wire „	0	2	4	.. —
TIN—English Ingots „	0	2	9	.. —
SOLDER—Plumbers' „	0	1	6	.. —
Tinmen's „	0	2	0	.. —
Blowpipe „	0	2	7	.. —

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	8d.	32 oz. fourths	11d.
„ thirds	8½d.	„ thirds	1/-
21 „ fourths	9d.	Fluted, Obscured and Enamelled Sheet, 15 oz.	10d.
„ thirds	9½d.		
26 „ fourths	10d.	21 „	1/-
„ thirds	11d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	6½d.
⅛ Rough rolled and rough cast plate	7½d.
¼ Rough rolled and rough cast plate	8½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	7d.
White Rolled Cathedral	7d.
Tinted do.	9d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes per gallon	0 8 2
„ „ „	in barrels „	0 8 4
„ „ „	in drums „	0 8 6
Boiled „ „	in barrels „	0 8 10
„ „ „	in drums „	0 9 0
Turpentine	in barrels „	0 14 11
„	in drums (10 gall.) „	0 15 5
Genuine Ground English White Lead, per ton		82 0 0

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	113	10 0
Red Lead, Dry (packages extra) per ton	60	0 0
Best Linseed Oil Putty per cwt.	1	12 3
Filocol per cwt.	1	0 5
Size. X D Quality fkn.	0	5 9

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 18 0
Fine ditto	ditto	1 0 0
Fine Copal	ditto	1 1 0
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 6
Best ditto	ditto	1 14 6
Floor Varnish	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size		0 16 6
Best Black Japan		1 0 9
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 9
Berlin Black		0 19 9
Knotting (patent)		1 18 6
French and Brush Polish		1 14 0
Liquid Dryers in Terebine		0 16 0
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	24	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 *to* 6	per yard cube	54	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2 : 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	48	10	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat strucks or weathered joint	" "	0	0	3½

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	1	0
Axed in stocks	" "	0	2	0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7	0

SUNDRIES.

Damp course in double course of slates breaking joint and beaded in Portland cement	" "	0	1	8
Setting ordinary register grates and stoves	each	1	5	0
Setting kitchener, including fuming flues, &c., with all necessary fire bricks	"	6	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

York stone templates fixed	per foot cube	22	0	
York stone sills fixed	" "	35	0	
Bath stone and all labour fixed	" "	16	9	
Portland stone fixed	" "	25	9	

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	78	0	
Do. 20 in. × 10 in. Do. Do.	"	93	0	
Do. 24 in. × 12 in. Do. Do.	"	95	0	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	9	6	
Do. joists	" "	10	6	
Do. roofs, floors and partitions	" "	11	9	
Do. trusses	" "	14	0	

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/-	81/-	100/-	108/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	68	0
Do. to beams	per ft. sup.	1	10
Centres for arches	"	2	4
Gutter boards and beams	"	1	9

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/-	104/-	120/-
Do. tongued and grooved	"		88/-	110/-	127/-
Do. matchings	"	74/-	89/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights ; average size	" "	5	6

DOORS.

		1¼"	1¾"	2"
Two-panel square framed	per ft. sup.	2/8	2/11	3/1
Four-panel Do.	"	3/-	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do.	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/-	2/2	2/3
Add if cross tongued	"	2/-	2/-	2/-

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough bracelets	"	3/4	4/-	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail ; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/-	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good	20/-
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	43	0
Plain compound girders	"	47	0
Do. stanchions	"	49	0
In roof work	"	53	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	2/-	2/6	3/9	4/3
Ogee Do. Do.	"	2/6	3/3	4/-	5/-
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/-	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/-	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	83	0
Do. Do. in flats	"	78	0
Extra labour and solder in coated cesspools	each	8	0
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	3
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/11	2/3	4/-	5/-	
Do. service	"	1/10	2/5	3/-	4/9		
Do. soil	"						
Bends in lead pipe	each						8/-
Solderer's stop ends	"	1/6	2/-	2/6	3/6	4/-	10/-
Red lead joints	"	1/1	1/4	1/7	2/4	4/3	
Wiped soldered joints	"	3/6	4/3	5/-	6/-	3/-	6/-
Lead traps and cleaning screws	"					8/-	12/-
Bib cocks and joints	"	7/6	11/3	18/-	18/-	24/-	
Stop cocks and joints	"	18/-	20/-	30/-	48/-		
					75/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. siripite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	0
Portland cement screed	" "	3	0
Do. plain face	" "	4	6
Mouldings in plaster	per l girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	9

GLAZIER.

21 oz. sheet plain	per foot sup.	1	10
26 oz. Do.	" "	2	0
Obscured sheet	" "	2	3
⅛ in. rolled plate	" "	1	3½
¼ in. rough rolled or cast plate	" "	1	4½
¼ in. wired cast plate	" "	1	9½

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/- to 5/-	

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Approval has been given to the erection of four dwelling houses on the west side of a street proposed to be laid out on the north side of Craigton-road, beyond the municipal boundary, for Dr. H. B. Williamson; fish curing premises on the north side of Sinclair-road, for Mr. R. Christie; two dwelling houses on the east side of Hammersmith-road, for Mr. J. Shirras; dwelling house on the north side of Beechgrove-terrace, for Mr. Alexander Hall; and additions to eight business establishments; while sanction was also given to the construction, at an estimated cost of £1,010, of the necessary sewers for the drainage of the houses in connection with Section 3 of the municipality's housing scheme at Torry to provide 500 additional houses.

BATH.—Plans passed: Alterations, 19 & 20, Lansdown-crescent; garages, Newbridge-road West; garage, rear of Bruton-avenue; doorways, &c., 8, New Bond-street-place; alterations, rear of Philip-street; conversion of upper floors into tenement dwellings, 8, Southgate-street.

BOURNEMOUTH.—Plans passed: Two shops and garage, Southbourne-grove, for Messrs. S. Brown & Sons; alterations and additions, "East Cliff Cottage," Grove-road, for Mrs. Mayor; additions to workshops, Wynyard-road, for Mr. W. W. Baker; garage, Withermoor-road, for Mr. Whitmarsh; motor garage, 26, Talbot-avenue, for Mr. W. Parsons; additions, 11, Colville-road, for Messrs. Malmesbury & Parsons' Dairies, Ltd.; alterations, 19 & 21, Old Christchurch-road, for Messrs. Paragon, Ltd.; additions to stores, Norwich Back-road, for Mr. W. H. Saunders; additions, 41, Seamoor-road, for Mr. Kingsnorth; house, Heathwood-road, for Mr. Hawkins; two bungalows, Cecil-avenue, for Mr. W. Hayward; motor house, Guildhill-road, for Mr. A. H. Jackson; house, Gresham-road, for Mrs. Evans; gardener's cottage, "Hengistbury," St. Catherine's-road, for Mrs. Lacon-Gordon; three houses, Heatherlea-road, for Mr. H. G. Ives; house, Nursery-road, for Mr. H. Bower; store, Tuckton-lane, for Mr. F. G. Elford; house, Methuen road, for Mr. A. Ellison; additions, "Littleton Lodge," Florence-road, for Mr. W. Webb; house, Wilfred-road, for Capt. J. B. Saunders; house, Keswick-road, for Mrs. E. W. Barnes-Martin; two bungalows, Richmond Park-avenue, for Mr. W. Hayward; house, Guildhill-road, for Mr. A. H. Jackson; house, Kimberley-road, for Mr. Blake; five houses, Irving and Herberton-roads, for Mr. H. G. Mills; bungalow, Sutton-road, for Messrs. Wellstead Bros.; bungalow, Court-road, for Messrs. Wellstead Bros.; store, 24 & 26, Trafalgar-road, for Mr. J. Martin; two bungalows, Charminster-road, for Mr. W. H. Ridout; bungalow, Charminster-road, for Mr. H. C. Ridout; store, Northcote-road, for Mr. G. W. Jones; 11 houses, Firs Glen-road, for Mr. S. Gidlow; house, Queen Mary-avenue, for Mrs. H. C. Barnes; house, Keswick-road, for Mr. W. Butt; alterations, "The Continental," Cliff Cottage-road, for Mr. T. E. Williams; two houses, Gresham-road, for Mrs. Evans; house, 51, Coronation-avenue, for Mr. Gledstone; house, Coronation-avenue, for Mr. W. W. Baker; house, Iddesleigh-road, for Mr. J. A. Nethercoate; house, Methuen-road, for Mr. A. Ellison; additions, "Koyama," West Cliff-road, for Mr. J. G. Robinson; additions, Printing Works, Oxford-road, for Mr. R. F. Sydenham; bungalows, Arnewood-road, for Miss H. de Guise; bungalow, Charminster-road, for Mr. W. Moore; house, Boscombe Overcliffe-drive, for Mrs. Lucas; four houses, Heatherlea-road, for Mr. A. Ives; house, Watcombe-road, for Mr. R. Clark; house, Portman-crescent, for Mr. W. J. Dacombe; house, Castle-lane, for Mr. T. W. Palmer; house, Roslin-road, for Mr. P. H. White; block of flats, restaurant, &c., Sea-road, for Mr. G. F. de Zoete; two houses and motor houses, Stirling-road, for Mr. J. J. Elkins.

BRIDLINGTON.—Plans passed: Mr. Melch Walkington, garage at "Beech Villa." St. John's-avenue, for Mr. E. Hardman; Mr. M. B. Parkin, alterations to 25, Promenade, for Mr. J. Burrell.

CHELMSFORD.—Bungalow, Rothesay-avenue, for Messrs. Eglin & Stebbings; garage, Victoria-road, for the Anglo-American Oil Co.; conversion of stables into dwelling houses at police headquarters, for the Essex County Council.

CRESWELL.—The War Memorial Committee have accepted the tender of Mr. A. Borrowdale, of Worksop, for the erection of a broken column and flag memorial in marble on which the names of the fallen will be engraved. The cost will be well over £400.

DUNDEE.—At a meeting of a sub-committee of Dundee War Memorial Committee, it was decided that a memorial chapel should be erected on the ground in front of the City Chambers at an estimated cost, together with a permanent record of the names of the men who fell, of £25,000.

DURHAM.—The County Council has approved the plans for the extension of the administrative block of the Black Fell Hospital.

EAST HAM.—Plans passed: Conservatory, 217, Browning-road, Manor Park, for Mr. S. H. Lawford; stable at rear of 69, Masterman-road, for Messrs. Dadd & Nicholls; alterations and additions to club premises, 245–27, Katherine-road, for Mr. J. W. Lohden.

HAMMERSMITH.—Drainage plans approved: At 29, Hammersmith-broadway, for Messrs. C. Farley & Sons; 95, Hammersmith Bridge-road, for Mr. W. F. Dixon; 18, Rowan-road, for Mr. W. Wilson; 45, Beadon-hill Arches, for Mr. C. H. Cook; 47, King-street, for Messrs. Hilborn & Sons; Osram Lamp Works, Brook-green, for Messrs. J. S. Quilter & Sons.

HESTON AND ISLEWORTH.—Plans passed: Messrs. Wills & Sons, for additions to offices, Ivy-road, Hounslow; Mr. Clarke Ashworth, for house, St. Peter's-road, St. Margarets; Mr. E. G. Burr, two houses, Church-road, Heston; Mr. J. H. Neal, additions to factory, 190, Hanworth-road, Hounslow; Messrs. Danels & Sons, Ltd., additions to "Westholme," Staines-road, Hounslow; Messrs. W. J. Lovejoy & Sons Ltd., roof over yard, 112, High-street, Hounslow; The Lorival Manufacturing Co., Ltd., for North Light Factory, Norwood Court, Heston; Mr. A. V. Baker, two cottages, Springwell-road, Heston; Mr. W. Leighfield, house, Jersey-road, Osterley.

ILFORD.—Plans passed by U.D.C.: Mr. J. W. Hobbs, 40, Emerson-road, 12 houses, two garages, Cranbrook-road; Mr. W. Harper, 174, Bow Common-lane, E. 3, alterations to "Grafton Stores," Ilford-lane; Mr. W. J. Hobbs, 40, Emerson-road, 14 houses, 56–82, Beehive-lane; Mr. H. Seymour, 94, Ley-street, Ilford, lavatories to workshop, "Wharf House," High-road; Mr. W. E. Trent, 6, Praed-street-place E.C., additions, 137, High-road; Messrs. Howards & Sons, Ltd., Uphall Works, new building; Mr. E. T. Dunn, house, Park-avenue; Messrs. Robinson Bros., 5, Cameron-road, Seven Kings, extension to garage, 7, Eversley-terrace, Green-lane; Mr. W. Lewin, Hainault-street, house, Cranbrook-road, for Mr. F. B. Taylor; Mr. F. W. Hitchcock, eight houses, 168-182, Cambridge-road; Messrs. Clemens Bros., East Ham, additions, 10, Cranbrook-road; Mr. H. Seymour, 94, Ley-street, alterations to existing buildings, "Wharf House," High-road; Mr. T. S. Lello, Chadwell Heath, house, Cranbrook-road, for Mr. E. W. Ludlow; Mr. Lester, garage, 12, Cranbrook-road; Mr. J. Feehan, shed, 349, Ley-street; Mr. H. Seymour, lavatories, 2, High-road.

ILKESTON.—Plans passed: Petrol store, Rupert-street, for the Shell Motor Spirit Co., Ltd.; additions to bungalow, Derby-road, for Mr. Geo. Williams; conversion of Army hut to dwelling house, Kingsway, for Mr. S. E. Cope; garage, Derby-road, for the Ilkeston Co-operative Society; house, Kingsway, for Mrs. L. E. Hallam.

KENDAL.—Plans have been passed for additions to Far Cross Bank Mission Room, for the Rev. E. W. J. McConnell.

MANCHESTER.—The Housing Committee has reported the receipt of a tender from the Building Guild for the erection of 352 dwelling houses on the Clayton Estate, which has been reserved for the Guild. The details of the tender will be fully considered by the Committee at its next meeting.

MOSSLEY.—The M.T.C., who had decided to build new houses at the rate of 10 per year, have received an order from the Ministry of Health that they must build 250 new houses, and that 125 of these must be built within the current year. They are asked to submit the scheme within one month.

NEWPORT (ISLE OF WIGHT).—Stores, Newport Quay, for Messrs. J. Thomas & Co.

PORTRUSH.—Plans passed by U.D.C.: Two houses at Croc-na-mac-road, for Mr. Thos. Bamford; two houses for Mr. R. A. Chambers; five houses at Croc-na-mac-road for Messrs. Robert Gregg & Co.; house at Eglinton-lane, for Mr. W. I. Cunningham; four houses at Causeway View-lane, for Mr. Richard Charles.

STOCKTON-ON-TEES.—House, Bishopton-road, for Mr. A. S. Bond.

WILLESDEN.—Plans passed by U.D.C.:—Six houses, St. Michael's-road, Cricklewood, for Messrs. Freeman & Sons; extension of sewer, Oaklands-road, for Mr. A. McBain; gate-house, Neasden-lane, by Mr. A. Alban H. Scott, for the British Thomson-Houston Co.; new road and sewers, Dollis Hill-lane, by Mr. A. Myers, for His Majesty's Office of Works; factory, Acton-lane, Harlesden, by Messrs. Yetts, Sturdy & Usher, for Messrs. F. T. Morrell & Co., Ltd.; new lavatories, &c., Barrets-green-road, Harlesden, by Mr. G. A. Sexton for Messrs. Cox Cavendish Electrical Co. Ltd.; extension of foundry over yard, new boiler house, &c., Central Works, Cricklewood, for Messrs. Smith & Sons, Ltd.; workshop, 101, Villiers-road, Willesden Green, by Messrs. S. Smith & Sons, Ltd., for Mr. T. H. Greatrex; electricity sub-station, British Ensign Motor Works, Pound-lane, Willesden, by Mr. G. Warren, for the W.D.C. Electricity Committee; addition to factory, Twyford Abbey Works, Barret's Green-road, Harlesden, by Mr. G. A. Sexton, for the Cox-Cavendish Electrical Co., Ltd.; alterations, 34, Chambers-lane, Willesden Green, for Mr. S. T. Nunn; petroleum tank, 49, Brownlow-road, Harlesden, by Mr. J. H. Johnson, for the Nettolene Chemical Co., Ltd.; addition to factory, Carlton Vale, Kilburn, by Messrs. Trant Brown & Brightiff, for the Delaunay Belville Co., Ltd.

FIRES.

BLACKBURN.—Damage estimated at £40,000 has been caused by fire at Aspden's Timber Works, near Blackburn.

GLASGOW.—Fire has occurred at the premises of Messrs. M'Pherson Bros., Ltd., at the corner of Argyle and Queen-streets, and at the works of Messrs. Mowat & Miller, Drumoyne-road.

POPLAR.—Damage estimated at over £20,000 has been caused by fire at Messrs. J. W. Nicholson's distillery, 3, Mill-lane.

YORK.—A serious fire has occurred in the timber sheds and sawmills of Messrs. Rowntree's Cocoa Works.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

*** Denotes *accepted*. † Denotes *provisionally accepted*.**
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

CHELMSFORD.—For painting and colour-washing at certain schools, for the T.C.: Mr. P. T. Harrison, A.M.I.C.E., Borough Engineer, Chelmsford; quantities by engineer:—

[Three tenders received, and having regard to the high amounts of tenders, the Committee resolved to recommend that the execution of the works be postponed until a further date.]

CHELMSFORD.—For alteration to the Horse Run in the Market, &c., for the T.C. Mr. P. T. Harrison, A.M.I.C.E., Borough Engineer, Chelmsford; quantities by engineer:—

*F. J. French Coval Works, Chelmsford £230

DENHAM.—For the erection of 18 pairs of cottages on Denham Place Estate, for the Middlesex C.C.:—

*Collinson & Co., Teddington..... £35,255

DENHAM.—Erection of covered cattle yard at Redhill Farm, for the Middlesex C.C.:—

*Collinson & Co., Teddington..... £2,774

DERBYSHIRE.—For the erection of out-patients' department at the Derbyshire Royal Infirmary. Messrs. Young & Hall, architects, 17, Southampton-street, W.C.:—

Walker & Slater, Derby £24,460

DURHAM COUNTY.—For painting at Sealburn Hospital, for the County Council:—

*T. Wilson, Ryton..... £242 17

DURHAM.—For renovation at Holywood Hall, for the Durham C.C.:—

*Whitfield..... £255 5

EAST RIDING OF YORKS.—The County Council has accepted the following offers for buildings on a fixed profit rate:—

*J. Constable, Beverley—Roadmen's house at Leconfield, at fixed profit of £95
*J. H. Thompson, Eastrington—Teachers' house at Spaldington, at fixed profit of £100
*J. H. Thompson—School attendance officer's house at Howden, at fixed profit of £95

EDMONTON.—Cleaning and painting at Gas Meter Testing Station, for the Middlesex C.C.:—

*Groves & Co..... £113 15

GLASGOW.—Supply of 275 tons of 24 in. cast iron pipes to the Water Dept.:—

*Macfarlane, Strang & Co. £6,029 7 6

HAMPTON COURT.—Repainting bridge, for the Middlesex C.C.:—

*W. H. Gaze & Sons, Ltd., Kingston ..	£933
S. Kavanagh & Co., Surbiton.....	949
Limpus & Son, Kingston.....	996
J. A. Baker & Co., Staines.....	996
H. Morecroft, Acton.....	1,079

HESTON AND ISLEWORTH.—Erection of 256 houses, for the U.D.C.:—

*McAlpine—At basic prices ranging from £851 to £1,047 for concrete houses and £899 to £1,058 for brick houses.

ILFORD.—Construction of drainage, &c., in connection with 100 houses being erected for the U.D.C.:—

*J. Seymour £5,334 8 4

ILFORD.—Construction of new road and drain in connection with Ley-street housing site, for the U.D.C.:

*R. Stroud, Ilford £3,042 0 11

KILMARNOCK.—For the formation of roads, and laying of sewers, gas and water mains, for the T.C. Mr. R. Beachwood, Burgh Surveyor, Kilmarnock:—

*David Gibson, Glasgow..... £5,862 3 9

LONDON.—For supply of 20,000 9 in. × 3 in. × 4½ in creosoted deal paving blocks to the Lambeth B.C.:—

*Improved Wood Pavement Co., at £36 7s. per thousand.

LONDON.—Construction of dam and river wall at pump house, for the St. Pancras B.C.:—

*Somerville & Co., London: £2,100 plus £100 for the removal of excavated material.

LONDON.—For improvements of the Town Hall, for the Greenwich B.C.:—

*Gilbert Seale & Son, Camberwell.. £2,757

LONDON.—For provision of foundations for turbine at Electricity Works, for the Islington B.C.:—

*Wilson, Lovatt & Sons, Wolverhampton £4,720

LONDON.—Supply of pipes at Electricity Station for St. Pancras B.C.:—

*Alton & Co., Derby..... £3,073 15 0

LONDON.—For work at Disinfecting Station of the Islington B.C., including erection of cottage, &c.:—

*Slade & Co., Ltd., Barnsbury	£2,860
J. C. Mather, N.....	2,900
T. Shillitoe, Norwood	3,400
J. Johnson, N.	3,498
Hooper & Ryder, Highgate	3,940
Geo. Bennett, Hornsey.....	4,605

LONDON.—For erection of 20 flats at 9, Warltersfield-road, Crouch Hill, for the Islington B.C. :—

*Thomas Shillitoe, Norwood	£24,800
Sabey & Son, Islington	25,111
W. Lawrence & Son, Ltd., Finsbury	25,620
Dove Bros., Islington	25,710
Rice & Son, Stockwell	25,944
Geo. Slade & Co., Ltd., Barnsbury Park	28,997

*Revised and reduced to £20,308

MALDON.—(*a*) For laying water mains at Heybridge, and (*b*) for laying sewer at Heybridge, for the R.D.C. :—

*(*a*) J. J. Furlong	£415
*(*b*) Thistlewood	961

MIDDLESEX.—Widening of Syon-lane bridge in reinforced concrete on the Hennebique system, for the Middlesex C.C. :—

*J. Moffatt	£3,515

MIDDLESEX.—For resurfacing Kingston and Staines main road, between Garrick Villa and the Hampton Wick District boundary, for the Middlesex C.C. :—

	At per yard. s. d.	Total. £ s. d.	Maintenance. Year.	Amount.
*Shepherd & Co., Acton, Middlesex	12 6	£6,846 17 6	1st	Nil.
			2nd	6d.
			3rd	8d.
			4th	8d.
Tarmac, Ltd., Wolverhampton	12 8	6,938 3 4	1st	Nil.
			2nd	8d.
			3rd	10d.
			4th	No price.
Highway Construction Co., Ltd. (asphalt macadam)	21 6	11,776 12 6	1st	Nil.
			2nd	3d.
			3rd	3d.
			4th	Not tendered for.

LONDON.—Supply of 12,000 and 43,000 9 in. × 3 in. × 4½ in creosoted yellow deal blocks to the Islington B.C. :—

*Gabriel, Wade & English, Lambeth, S.E.	£1,883 15 0

LONDON.—Revised tenders for erection of flats at Highbury Park and Highbury Grange, for the Islington B.C. :—

*W. E. Davey, Southend-on-Sea	£154,832
Patman & Fotheringham, Islington	177,271
Rice & Son, Stockwell	177,523

* *The tender has been reduced to* £151,818

MAIDSTONE.—For construction of foundation beds, &c., for the Electricity Committee :—

	Foundation beds for new Turbine plant.	Three Electricity Sub-stations and one Junction box.
Smith & Son	£258	*£1,466
Wallis & Sons, G. E., Ltd.	255	1,622
Martin & Newman	252	1,488
Cox Bros.	250	1,627
Corben & Son, R.	*236	1,570

SOUTHGATE.—Enlargement of the County School, for the Middlesex C.C. :—

*C. J. Newby & Bros., Southgate	£12,630
A. Monk	12,770

STRANRAER.—For construction of Creetown grey granite memorial, for the War Memorial Committee :—

*R. W. MacKenzie, Newton Stewart	£925

STRATFORD.—For new laboratories, &c., to the Central Secondary School, Stratford, for the Education Committee of the West Ham Borough Council. Mr. J. H. Jacques, Lic.R.I.B.A., Architect to the Committee :—

†H. Somerford & Son, Clapham	£11,974
W. J. Maddison	12,990
A. E. Symes	12,985
H. C. Horswill	12,180

SUNDERLAND.—For alterations at the Dispensary, for the Durham C.C. :—

*Kirtley & Sons, Sunderland	£183 3 9

WALTON.—Repainting Walton Court Bridge, for the Middlesex C.C. :—

*W. H. Gaze & Sons, Ltd., Kingston	£445
Limpus & Son, Kingston	540
A. Baker & Co., Ltd.	684
S. Kavanagh & Co.	685
H. Morecroft	744

WILTON MILL.—Reconstruction of Gerrard's Bridge, for the Durham C.C. :—

*G. Mackey & Sons, Edinburgh	£5,399

TRADE NEWS.

Messrs. Gaston, Ltd., 212-214, Gt. Portland-street, W.1, the concessionaries for "Selden" motor lorries, etc., are at present specialising in the "Selden" 30-35 cwt. chassis, over 1,400 of which are in use in England. Its special features include simplicity in construction and ready accessibility to all working parts, and it is fitted with the Timken-David Brown worm drive rear axle. Messrs. Gaston are at present offering immediate delivery, and will furnish full specifications, prices, etc., on request.

Messrs. Vickers, Ltd., Broadway, London, S.W. 1, inform us they have opened a depot for Wales and the South-west of England at 43, Park-street, Bristol, at which address they will be glad to receive enquiries regarding their products.

The Directors of the London County Westminster and Parr's Bank, Ltd., have declared an interim dividend of ten per cent (the same rate as last year) for the half year ended June 30 on the £20 shares, and the maximum dividend of 6¼ per cent. on the £1 shares for the same period. The dividends, (both less income tax) were payable on August 3.

IT PAYS
TO EMPLOY A BROKER FOR ALL INSURANCES.
SHERWELL'S NEPHEWS
Insurance Brokers,
8, QUEEN ST., LONDON, E.C.4.
Telephone No.: CITY 7482.

"ARRABER" (Patd.)
BRITISH MANUFACTURE.
Everlasting (Equal to Rubber) Floor and Stair Covering, Wainscoting. Non-slippery, Noiseless and Sanitary. Can be laid on concrete damp-resisting—on wood fire-resisting. From 20/- per square yard. Estimates on receipt of plan.
MAINZER'S ARRABER CO.,
18 Berners Street, London, W.1.

OGILVIE & CO., Telephone: DALSTON 1388
Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

J. J. ETRIDGE, Jr. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS.
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone; Avenue 4940 (two lines), or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

JAPANESE OAK
QUARTERED & PLAIN BOARDS & PLANKS
SYDNEY PRIDAY
2a, Eastcheap, E.C.3 Tel.: AVENUE 667

War Memorials, Church Tablets, Celtic Crosses,
in Stone, Marble, or Granite. Designs Free.
MARBLE SHOPFITTINGS & STEPS.
KELLY & CO.
(Cramb Bros.) Ltd.
129, Marylebone Road, N.W.1
phone: "Padd. 5518."

B-V-C
PUMP OR TURBINE TYPE
Vacuum Cleaning INSTALLATIONS
FOR
DOMESTIC & PUBLIC BUILDINGS
Particulars and Specifications from
THE BRITISH VACUUM CLEANER CO., Ltd.,
Dept. S 31. Parson's Green Lane, London, S.W. 6.

HOWELL J. WILLIAMS Ltd.
Builders
High-Class Building
and
Joinery Work
11/17, BERMONDSEY STREET,
Telephone: HOP 202 LONDON BRIDGE, S.E. 1.
Builders of very many well-known Banks, Office and Business premises. Our works especially convenient for City Building and fittings.